Service Manual

V25180

DeskMaster 486S/25N

SPECIFICATION	
CPU	INTEL 80846SX-25M
CHIP SET	VLSI VL82C486 WD WD90C31 WD WD90C56 NS PC87311
ON BOARD MEMORY	UP TO 32MB
SIO	9 PIN SIO
PIO	25 PIN PIO
HDD	IDE TYPE HDD(OPTION)
FDD	5.25" OR 3.5"
SPEED	25MHz
OPERATION VOLTAGE	115V/60Hz, 230V/50Hz
PEAK POWER	118W
STEADY-STATE POWER	100W
FUSE(SLOW BLOW)	3A

SAMSUNG

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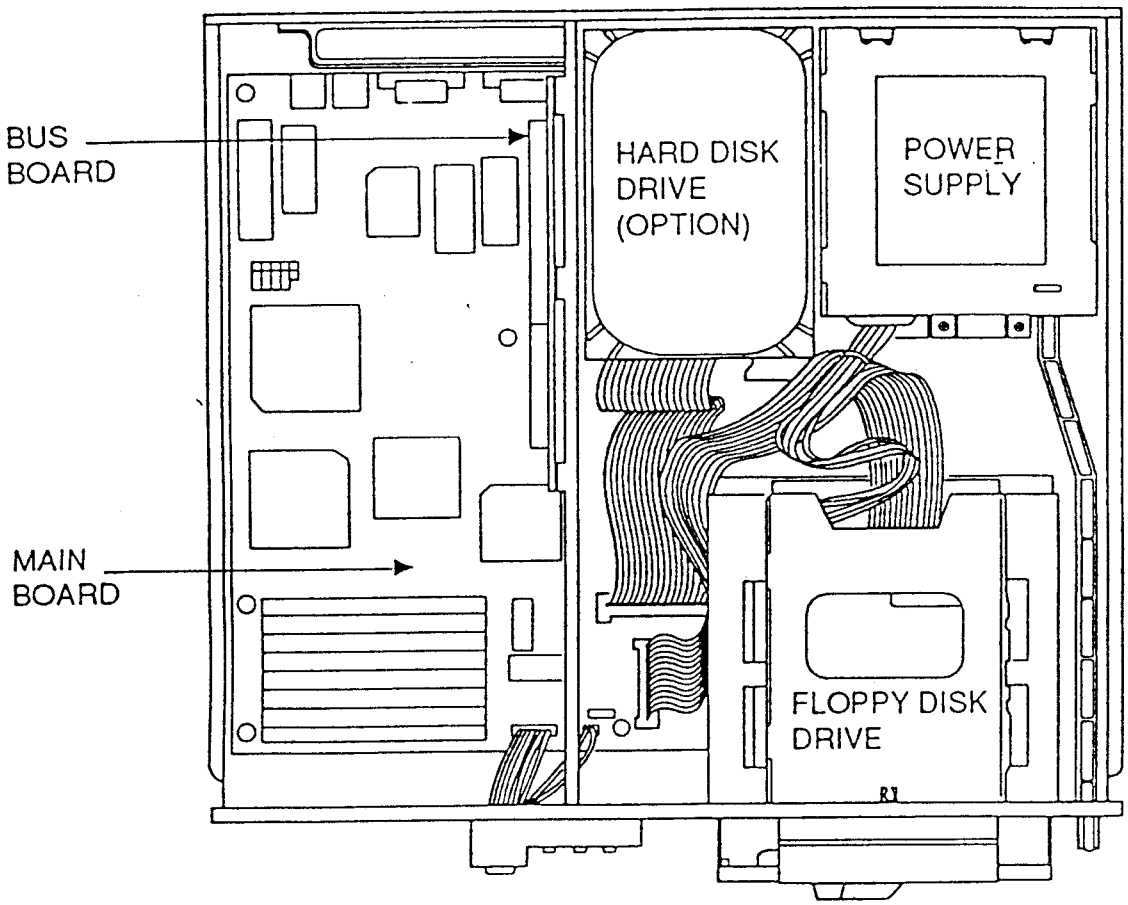
First Edition
Printed in Korea

SYSTEM CONFIGURATIONS

Microprocessor	• 80486SX- 25
Upgrade Socket	• 80486SX, 80486DX, ODP486, 486DX2: (25MHz)
Expansion Capability	• 3 expansion slots(16 - bit)
On Board Memory	• 4MB standard(expandable up to 32MB)
Cache Memory	• 8KB integrated on CPU
Read Only Memory(ROM)	• 64KB
Built-in Port	• 1 parallel port • 1 serial port • 1 PS/2 Mouse port • 1 analog VGA port
Data Storage	• Device bays - 2 open bays (accessible) - 1 hidden internal 3.5″ HDD bay • Floppy disk drive - FDC built-in on motherboard - 1.2MB(5.25″), 1.44MB(3.5″), 2.88MB(3.5″) • Hard disk controller - IDE interface logic built-in on motherboard
Graphics	• Fast Local Bus Super VGA built-in on motherboard
Keyboard	• 101/102 keys enhanced AT-compatible
Others	• Phoenix ROM BIOS • Hardware cursor and hardware BITBLT for the fast windows operation



A SYSTEM UNIT WITH ALL OPTIONS PRESENT.

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1. GENERAL INFORMATION

ABOUT THIS MANUAL

SYSTEM OVERVIEW

ABOUT THIS MANUAL

This is troubleshooting, maintenance and repair manual for servicing this Personal Computer. This manual is divided into several sections to allow fast, ease to use troubleshooting technigues. Individeal sections are designed to be self-contained manuals for all configuration, problem isolation, and location information.

REQUIRED TOOLS AND SUPPLIES

The following tools and supplies are required to service this personal computer:
- Screw Driver
- Chain Nose Pliers
- Wrap Plug(Used for serial and parallel port test)
- Oscilloscope(More than 200MHz)
- Test Meter
- Functional Diagnostics Program Diskette
- Formatted Scratch Diskette(s)
- MS-DOS Diskette : Ver 5.XX

ASSOCIATED DOCUMENTATION

You might need to consult the following associated system documentation:
- User's Guide
- MS-DOS Manual(Ver 5.XX)

SYSTEM OVERVIEW

This system is a self-contained, fully integrated desktop computer. It is designed to meet the growing needs of business for increased processing speeds and data storage while maintaining compatibilety with the IBM standard. The system is compatible with the IBM AT and runs IBM PC and AT software. It is expandable, with option slots that can fulfill your business needs for many years without becoming obsolete.

The fully configured system contains the following standard equipment

- System unit - the system chassis houses the main board, bus board, power supply, and the system options.

- System Options - these include the hard disk, an extra-high-density floppy disk drive, and a double density floppy disk drive.

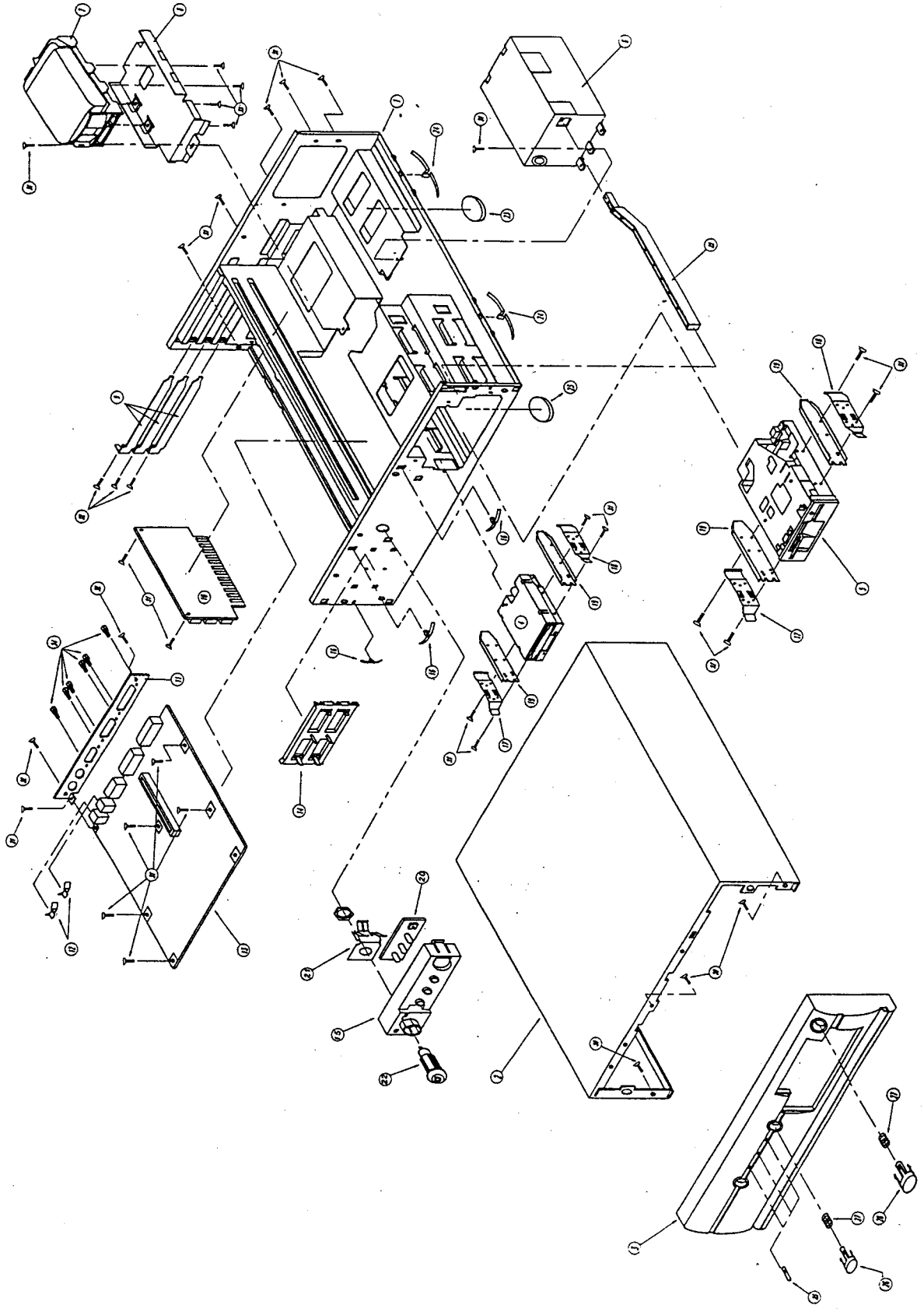
- Main board - The main board contains the 80486SX microprocessor, 1 serial port, 1 parallel port, 1 PS/2 compatible mouse port, adapter logic for Embedded Hard Disk Drive, Floppy Disk controller, our own Local Bus Super VGA, ROM BIOS(Basic Input Output System), Performance Upgrade Socket and SIMM sockets for memory expansion up to 32MB

- Bus Board- the bus board has three 16-bit expansion slots for PC-AT-compatible cards

2. SYSTEM EXPLODED VIEW

SYSTEM EXPLODED VIEW
MECHANICAL PARTS LIST
PHYSICAL MEASUREMENTS
REMOVING AND REPLACING THE SYSTEM BOARD

SYSTEM EXPLODED VIEW



MECHANICAL PARTS LIST

NO	DESCRIPTION	PART NUMBER	SPECIFICATION	Q'TY
1	BOTTOM- ASS'Y	98901-902-110	EGI	1
1	CHASSIS-COVER	96121-907-210	EGI T1.0	1
3	BEZEL - ASS'Y	98901-902-330	ABS94Vo VH0800- C7096	1
4	FDD 3.5" 1.44M			1
5	FDD95TPI			1
6	SMPS-ASS'Y			1
7	HDD 3.5"			1
8	BRKT-HDD BASE	96612-920-110	EGI T1.0	1
9	BRKT-BLAND	98424-971-820	SPC-1 T1.0 NI	3
10	BUS-BOARD			1
11	BRKT-CONNECTOR'B	96613-920-412	EGI T1.0	1
12	CONTACT-KBD	96674-906-611		2
13	MOTHER-BOARD			1
14	GUIDE-PCB	96043-900-910	P.C.BLACK	1
15	PANEL-CONTROL	97603-900-910	ABS 94Vo	1
16	BRKT-CONTACT	96614-913-510	SUS-304 1/2H	3
17	SPRING-BRKT FDD(L)	96674-905-910		2
18	SPRING-BRKT FDD(R)	96674-905-920		2
19	BRKT-GUIDE FDD	96613-921-411	EGI T1.0	4
20	LED-PCB			1
21	SPRING KEY-LOCK	96674-908-110	SUS T0.2	1
22	KEY-LOCK			1
23	FOOT-RUBBER	98464-904-720	NATURAL-RUBBER	4
24	SPRING-CON COVER	96674-905-510	STS T0.3	4
25	LENS-LED	97654-901-611	ACRYL NATURAL	3
26	KNOB-RESET	97624-973-010	ABS 94Vo	1
27	SPRING-POWER	96674-902-010	SUS-WPA P10.5, ST-35	2
28	KNOB-POWER	97624-905-410	ABS 94Vo	1
29	LEVER-S/W	96613-919-410	ABS 94Vo	1
30	SCREW-TAPTITE, PH	97408-130-101	+B-3*10 FE-FZY	3
31	SCREW-BH	97088-130-062	+M3*6 FE FZW	19
32	SCREW-TAPTITE,BH	97458-230-062	+S-3*6 FE FZY	5
33	SCREW-PH/RH	97044-900-310	UNC6-32*1/4, SM20C	4
34	SCREW-HEXAGON	97094-900-310	UNC4-40, SUM24L, FN2	6

PHYSICAL MEASUREMENTS

Dimensions	English	metric
Height	3.86inch	98mm
Depth	15.47inch	395mm
Width	15.55inch	395mm

Weight(net)	English	metric
1 FDD	17.21b	7.8kg
2 FDD	19.81b	9kg
1 FDD, 1HDD	19.21b	8.8kg
2 FDD, 1HDD	221b	10kg

Power Supply	U.S./Canada	International
Operating Voltage	100-125V, 50/60Hz	200-240V, 50/60Hz
Steady-State Power	100W	100W
Fuse(slow blow)	3A	3A

Temperature Range	English	metric
Operating	50° to 104°F	10° to 40°C
Nonoperating	14° to 122°F	-10° to 50°C

Relative Humidity (Noncondensing)	U.S./Canada	International
Operating	20% to 80%	20% to 80%
Nonoperating	5% to 90%	5% to 90%

- SYSTEM UNIT -

REMOVING AND REPLACING THE SYSTEM BOARD

Replacing the system board requires the disconnection of all internal cabling to the board and the removal of all expansion cards.

1) Remove the cover

> CAUTION
>
> The extreme sensitivity of the system board components requires great care to ensure that the board will not be subjected to possible electrostatic discharges. It is strongly recommended that the following procedures be performend at an approved ESD workstation. If an ESD environment is not available, you can provide a minimum of ESD protection by wearing a wrist strap attached to chassis ground.

2) Disconnect the cables from the floppy/fixed disk drive controller header and identify for ease of reconnection. Disconnect any other cables that may be attached to the expanison cards.
3) If there was no expansion card in your system, skip this step. Remove the screw securing the card to the rear panel and gently slide the card out of the expansion slot.
4) Remove the two screws holding the bus board to the chassis. Remove the bus board from the system board.
5) Disconnect the power supply connector from the system board power connector.
6) Disconnect the keylock/power LED connector form the system board.
7) Remove the seven screws holding the system board to the chassis.
8) Check that the system board is free of any restraints and ready for removal.

> CAUTION
>
> Use extreme care when removing the board to ensure that the board surfaces are not scraped.

9) Carefully slide the board out of the chassis. If the board seems to hang up, do not force it. Move it slowly and back and forth, a little at a time. if necessary.
10) Place the board in a suitable protective wrapper or on an antistatic foam pad.
11) Remove a protective wrapper form the new system board and place on an antistatic foam pad.
12) Set all jumper pins on the new board to match the settings on the old board unless the system is also being reconfigured. In this cade, set jumpers accordingly.
13) If SIMMs and/or a math coprocessor are to be installed on the new board, refer to

the appropriate sections in user's Manual for the correct procedures.

14) Carefully line up the board correctly with the chassis and move gently into place. The board is positioned correctly when the seven screw holes line up.
15) Install the seven mounting screws.
16) Reconnect the keylock/power LED connector to the system board.
17) Reconnect the power supply connector to the system board power connector.
18) Reinstall the bus board on the system board.
19) Reinstall any expanison cards on the bus board.
20) Connect the cables to the floppy/fixed disk drive controller header. Reconnect any other internal cables that were proviously disconnected.
21) Record the serial number of the new system board in the Equipment Log.

3. DEBUGGING FLOW

SYSTEM BLOCK DIADRAM
SYSTEM BOARD ERRORS
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MAIN LOGIC DEBUGGING FLOW
VIDEO LOGIC DEBUGGING FLOW
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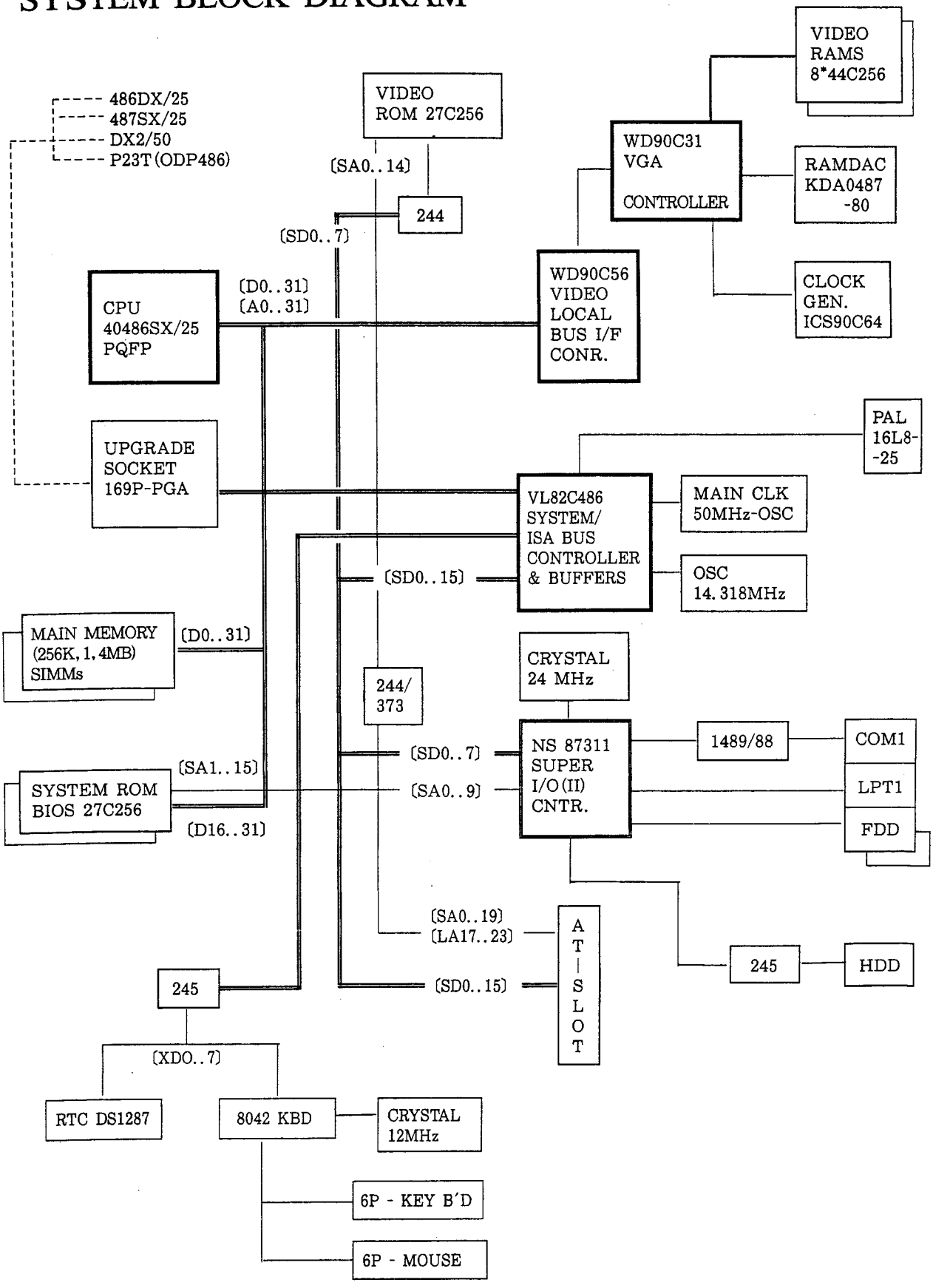
POWER SUPPLY OVERVIEW

SYSTEM BLOCK DIAGRAM



SYSTEM BOARD ERRORS

If the POST finds an error and cannot display a message on the monitor, the POST issues a series of beeps to indicate the error and places a value in I/O port 80H.

For example, a failure of bit 3 in the first 64KB of RAM is indicated by a 2-1-4 beep code(a burst of two beeps, a single beep, and a burst of four beeps). In addition, the POST writes a value to I/O port 80H to enable debugging tools to identify the area of failure.

The following tables list the beep codes and I/O port values that the POST generates when it encounters error conditions.

The first table lists fatal errors(errors that halt the system).

The second table lists the non-fatal errors(errors that aren't serious enough to halt the system). Both tables list other conditions that have no beep codes.

One beep code is not listed in Tables a long beep followed by one or more short beeps indicates a video adapter failure. No beep code is sounded if a test is aborted while in progress.

Beep Codes for Fatal Errors; and I/O Port Contents for Errors and Status

Beep code	Description of Error	Contents of 80H
None	80486 register test in progress	01H
1-1-3	Real-time clock write/read failure	02H
1-1-4	ROM BIOS checksum failure	03H
1-2-1	Programmable Interval Timer failure	04H
1-2-2	DMA initialization failure	05H
1-2-3	DMA page register write/read failure	06H
1-3-1	RAM refresh verification failure	07H
None	1st 64 KB RAM test in progress	08H
1-3-3	1st 64 KB RAN chip or data line failure multi-bit	0AH
1-3-4	1st 64 KB RAN odd/even logic faiure	0BH
1-4-1	1st 64 KB RAN address line failure	0DH
1-4-2	1st 64 KB RAM parity test in progress or failure	0DH
2-1-1	Bit 0 1st 64 KB RAM failure	10H
2-1-2	Bit 1 1st 64 KB RAM failure	11H
2-1-3	Bit 2 1st 64 KB RAM failure	12H
2-1-4	Bit 3 1st 64 KB RAM failure	13H
2-2-1	Bit 4 1st 64 KB RAM failure	14H
2-2-2	Bit 5 1st 64 KB RAM failure	15H
2-2-3	Bit 6 1st 64 KB RAM failure	16H
2-2-4	Bit 7 1st 64 KB RAM failure	17H
2-3-1	Bit 8 1st 64 KB RAM failure	18H
2-3-2	Bit 9 1st 64 KB RAM failure	19H
2-3-3	Bit A 1st 64 KB RAM failure	1AH
2-3-4	Bit B 1st 64 KB RAM failure	1BH
2-4-1	Bit C 1st 64 KB RAM failure	1CH
2-4-2	Bit D 1st 64 KB RAM failure	1DH
2-4-3	Bit E 1st 64 KB RAM failure	1EH
2-4-4	Bit F 1st 64 KB RAM failure	1FH
3-1-1	Slave DMA register failure	20H
3-1-2	Master DMA register failuree	21H
3-1-3	Master interrupt mask register failure	22H
3-1-4	Slave interrupt mask register failure	23H
None	Interrupt vector loading in progress	25H
3-2-4	Keyboard controller test failure	27H
None	Real-time clock power failure or checksum failure	28H
None	Real-time clock configuration validation	29H
3-3-4	Screen memory test failure	2BH
3-4-1	Screen initialization failure	2CH
3-4-2	Screen retrace test failure	2DH
None	Search for video ROM in progress	2EH
None	Screen running with video ROM	30H
None	Monochrome display operable	31H
None	Color display(40 cloumn) operable	32H
None	Color display(80 cloumn) operable	33H
None	Cache memory test failure	3FH

Beep codes

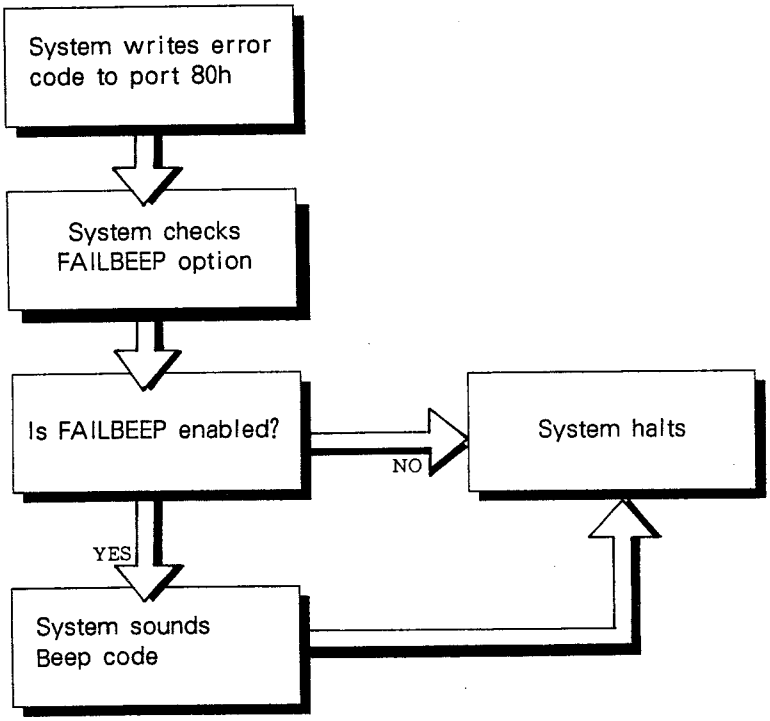
Sometimes POST errors cannot be reported on the screen. When an error occurs before the screen is initialized or when the system is set to loop on the system board tests, then the screen cannot display the error message. Beep codes are used to identify a POST error that occurs when the screen is not available.

Example

A 2-1-4 beep code (a burst of 2 beeps, a single beep, and a burst of 4 beep) indicates a failure of bit 3 in the first 64K of RAM.

Diagram

The diagram below shows the process performed by the system if an error occurs and the screen is unavailable.



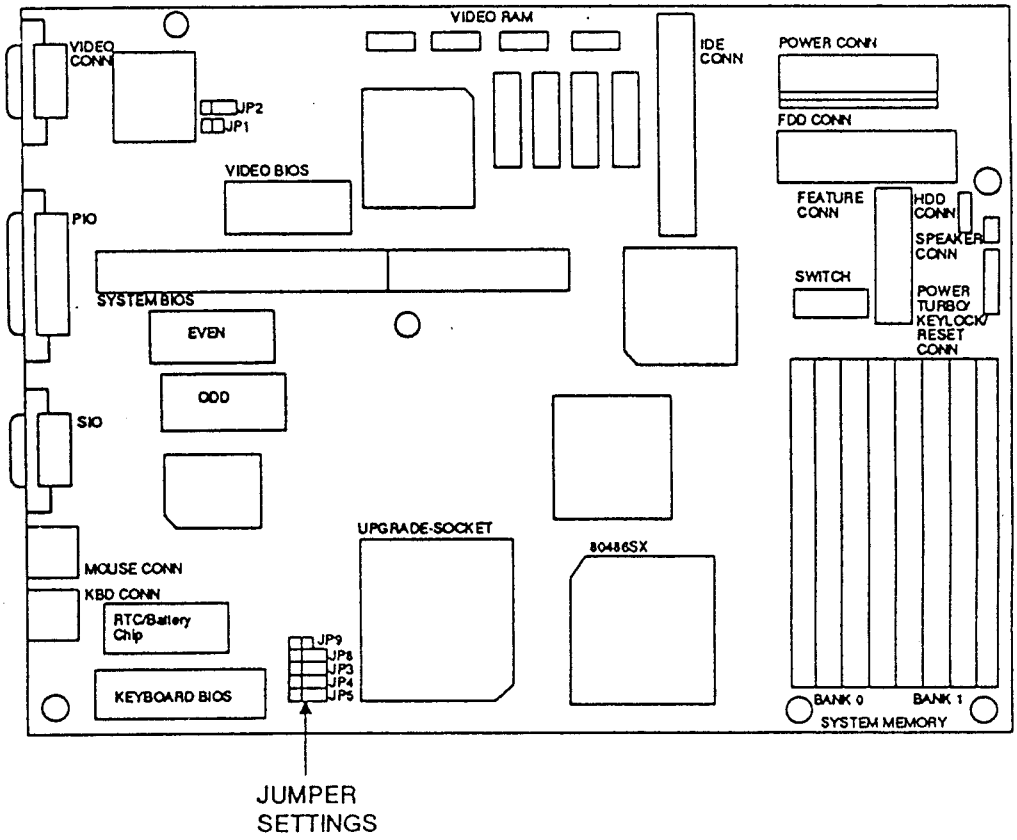
Using Beep Codes

The table below shows the errors for which beep codes and screen messages are used:

	System Board Failure		Off board Failure
	Fatal	Non-fatal	
Looping on system board tests (MANLOOP set to True	Beep and halt	Beep and halt	Not applicable
Normal power on (MANLOOP set to False)	Beep and Halt	Screen message and prompt to 'Press F1 to continue'	Screen message and prompt to 'Press F1 to continue'

MAIN BOARD JUMPER SETTINGS

There are a number of jumper and switch settings located on the main board that you should become familiar with before attempting to work on the system. The following figure illustrates their location.



Location of main board jumper and switch setings

BUILT-IN SETTINGS

SWITCH SETTINGS		OPERATION
SW7	SW6	
OFF	OFF	800 BY 600 2, 16, 256 56Hz*
OFF	ON	800 BY 600 2, 16, 256 60Hz
ON	OFF	800 BY 600 2, 16, 256 72Hz
ON	ON	800 BY 600 2, 16, 256 72Hz
SW5	SW4	
OFF	OFF	1024 BY 768 2, 4, 16, 256 INTERLACED*
OFF	ON	1024 BY 768 2, 4, 16, 256 60Hz N. I.
ON	OFF	1024 BY 768 2, 4, 16, 256 70Hz N. I.
ON	ON	1024 BY 768 2, 4, 16, 256 72Hz N. I.
SW3	OFF	1024KB VIDEO MEMORY INSTALLED
	ON	512KB VIDEO MEMORY INSTALLED*
SW2	OFF	USE MONOCHROME DISPLAY ADAPTER
	ON	USE COLOR GRAPHICS ADAPTER*
SW1	OFF	BUILT-IN VGA DISABLE
	ON	BUILT-IN VGA ENABLE*

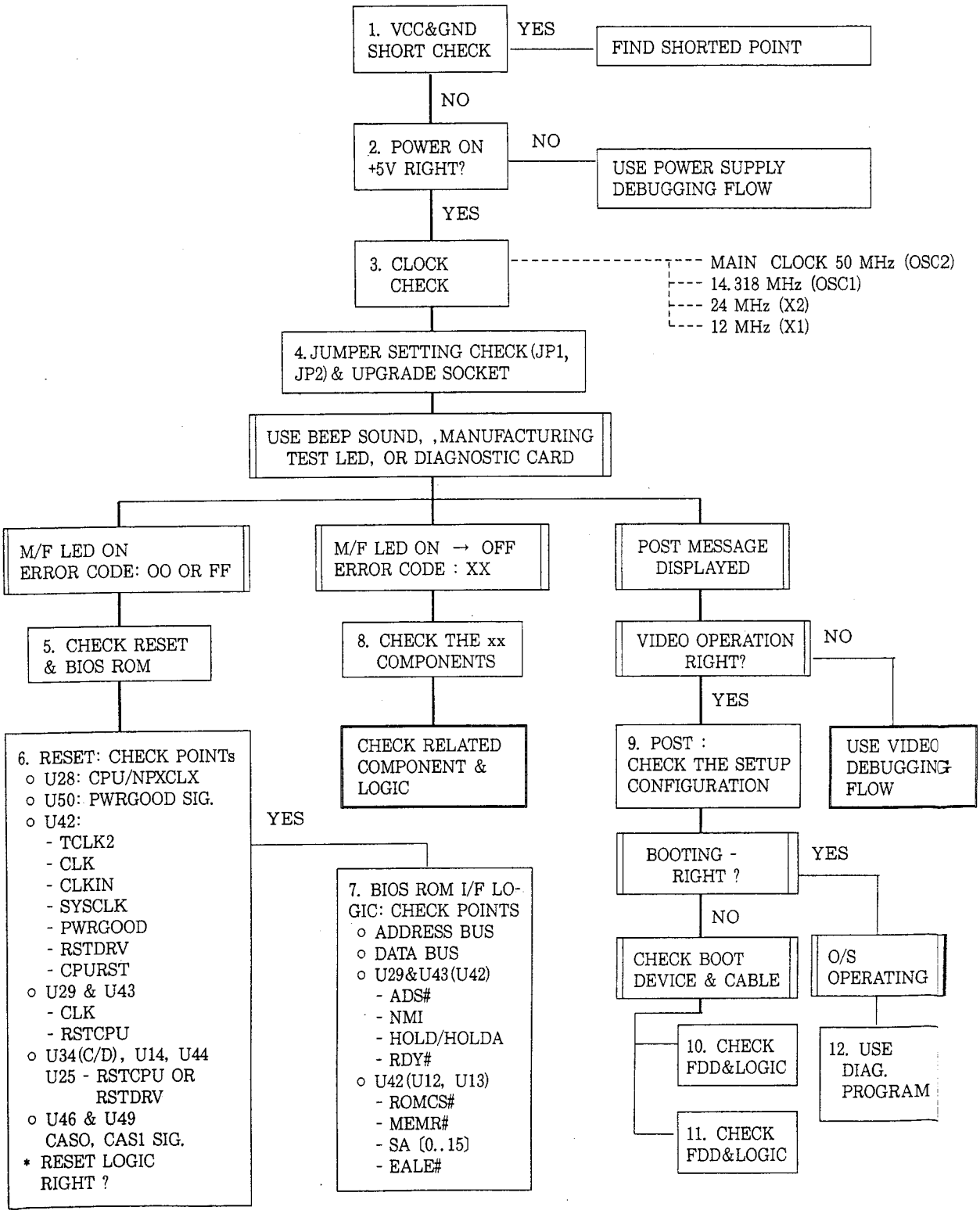
JUMPER SETTINGS		OPERATION (RAMDAC SELECTION)
JP1	JP2	
SHORT	2-3	BT478, BT476, KDA0478, KDA0476 INSTALLED*
SHORT	1-2	SC11483, SC11487 INSTALLED (HIGH COLOR)
OPEN	1-2	IMS178 INSTALLED

PERFORMANCE UPGRADE SOCKET USAGE AND MISCELLANEOUS

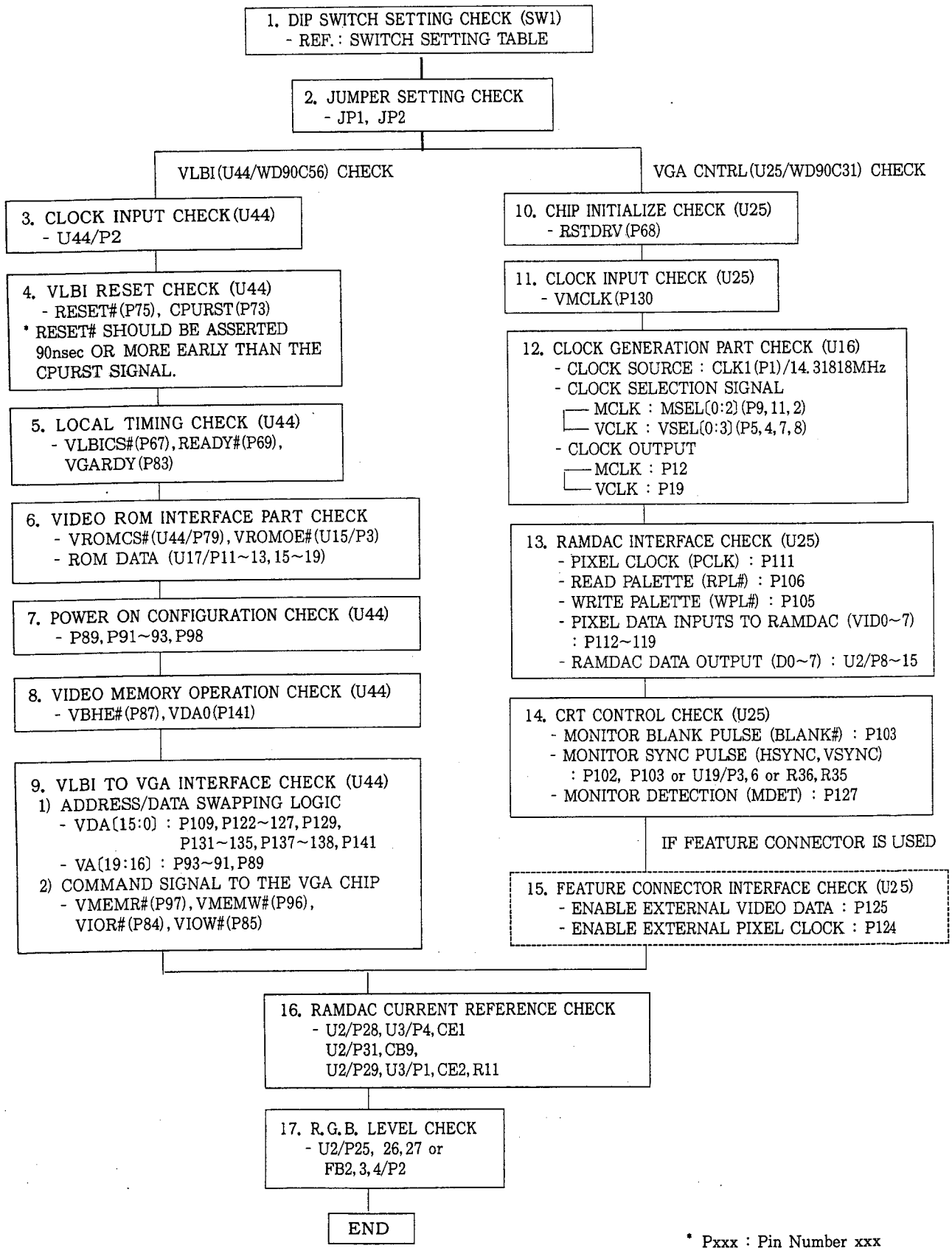
JUMPER SETTINGS				OPERATION
JP3	JP4	JP8	JP9	
OPEN	1-2	2-3	OPEN	486SX (PGA TYPE) is installed in Upgrade Socket.
1-2	1-2	1-2	SHORT	486DX/486DX2 is installed in Upgrade Socket.
2-3	2-3	1-2	SHORT	487SX/ODP486 is installed in Upgrade Socket*
				No Upgrade Processor is installed.
JP5	1-2			INT 12 is used for built-in PS/2-style mouse. *
	2-3			INT 12 is used for user's device.

*Factory default

MAIN LOGIC DEBUGGING FLOW

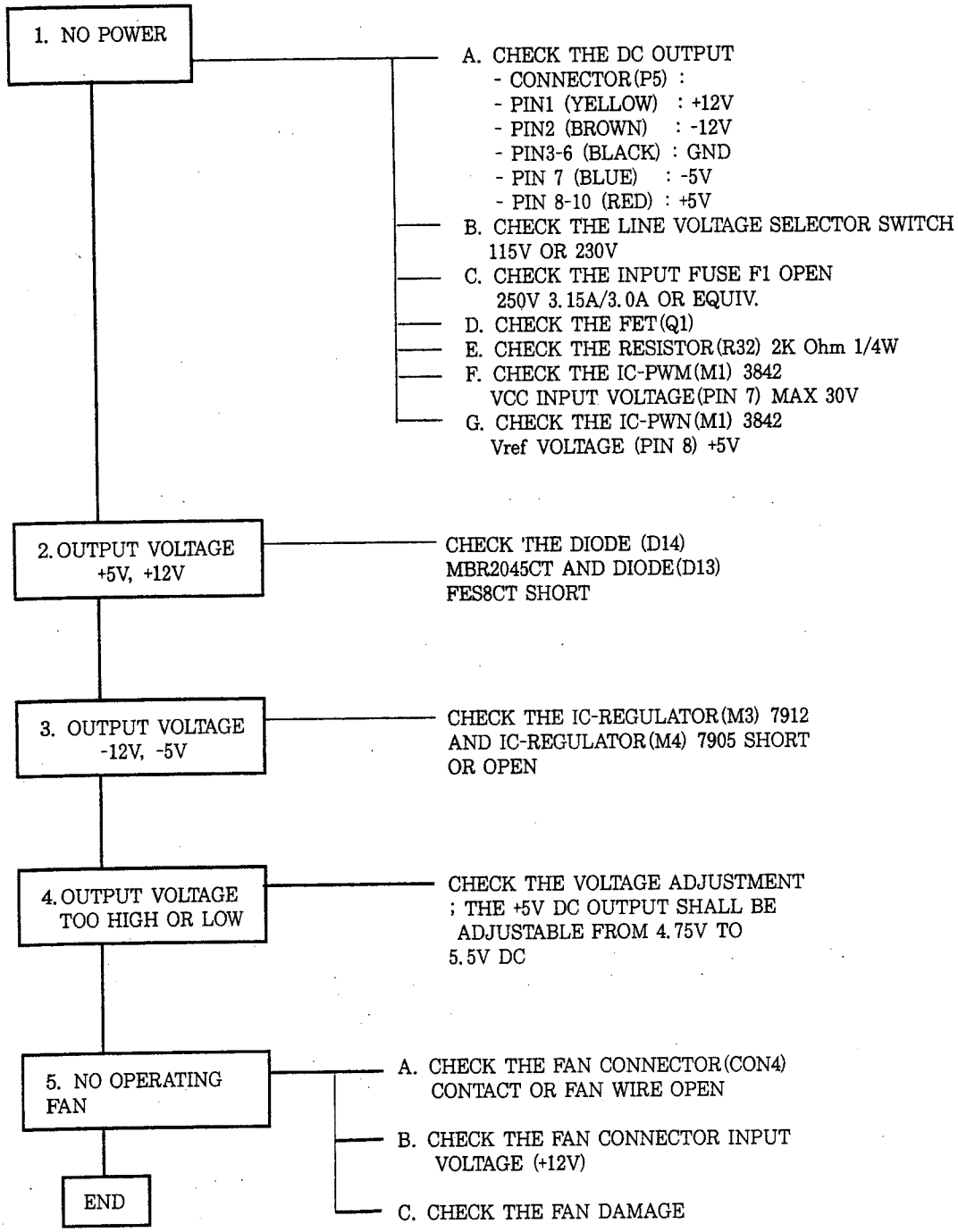


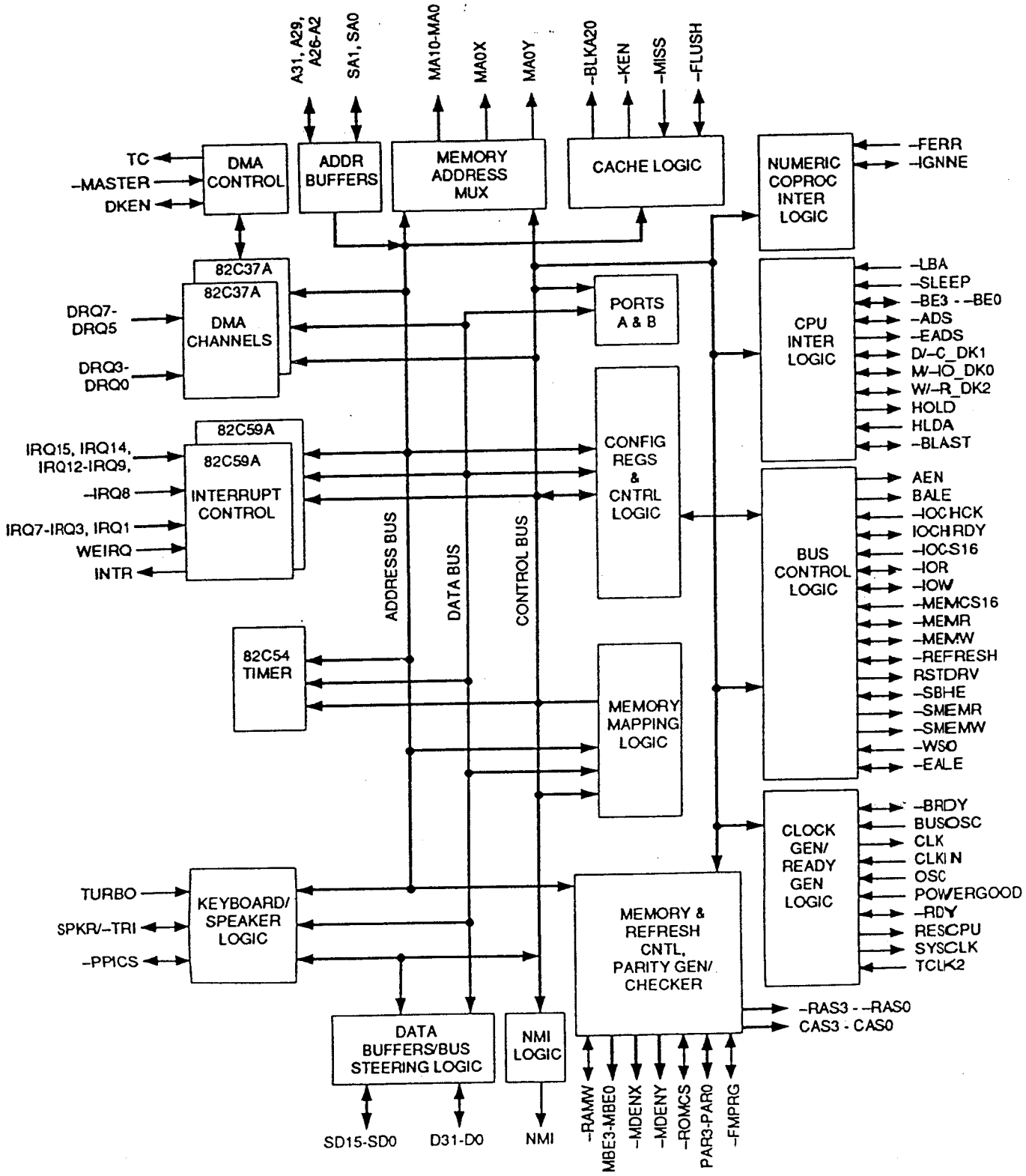
VIDEO LOGIC DEBUGGING FLOW


1. DIP SWITCH SETTING CHECK (SW1)
- REF.: SWITCH SETTING TABLE
2. JUMPER SETTING CHECK
- JP1, JP2
VLBI(U44/WD90C56) CHECK
VGA CNTRL(U25/WD90C31) CHECK
3. CLOCK INPUT CHECK(U44)
- U44/P2
4. VLBI RESET CHECK (U44)
- RESET#(P75), CPURST(P73)
* RESET# SHOULD BE ASSERTED 90nsec OR MORE EARLY THAN THE CPURST SIGNAL.
5. LOCAL TIMING CHECK (U44)
- VLBICS#(P67), READY#(P69), VGARDY(P83)
6. VIDEO ROM INTERFACE PART CHECK
- VROMCS#(U44/P79), VROMOE#(U15/P3)
- ROM DATA (U17/P11~13, 15~19)
7. POWER ON CONFIGURATION CHECK (U44)
- P89, P91~93, P98
8. VIDEO MEMORY OPERATION CHECK (U44)
- VBHE#(P87), VDA0(P141)
9. VLBI TO VGA INTERFACE CHECK (U44)
1) ADDRESS/DATA SWAPPING LOGIC
- VDA[15:0] : P109, P122~127, P129, P131~135, P137~138, P141
- VA[19:16] : P93~91, P89
2) COMMAND SIGNAL TO THE VGA CHIP
- VMEMR#(P97), VMEMW#(P96), VIOR#(P84), VIOW#(P85)
10. CHIP INITIALIZE CHECK (U25)
- RSTDRV(P68)
11. CLOCK INPUT CHECK (U25)
- VMCLK(P130
12. CLOCK GENERATION PART CHECK (U16)
- CLOCK SOURCE : CLK1(P1)/14.31818MHz
- CLOCK SELECTION SIGNAL
MCLK : MSEL[0:2](P9, 11, 2)
VCLK : VSEL[0:3](P5, 4, 7, 8)
- CLOCK OUTPUT
MCLK : P12
VCLK : P19
13. RAMDAC INTERFACE CHECK (U25)
- PIXEL CLOCK (PCLK) : P111
- READ PALETTE (RPL#) : P106
- WRITE PALETTE (WPL#) : P105
- PIXEL DATA INPUTS TO RAMDAC (VID0~7) : P112~119
- RAMDAC DATA OUTPUT (D0~7) : U2/P8~15
14. CRT CONTROL CHECK (U25)
- MONITOR BLANK PULSE (BLANK#) : P103
- MONITOR SYNC PULSE (HSYNC, VSYNC) : P102, P103 or U19/P3, 6 or R36, R35
- MONITOR DETECTION (MDET) : P127
IF FEATURE CONNECTOR IS USED
15. FEATURE CONNECTOR INTERFACE CHECK (U25)
- ENABLE EXTERNAL VIDEO DATA : P125
- ENABLE EXTERNAL PIXEL CLOCK : P124
16. RAMDAC CURRENT REFERENCE CHECK
- U2/P28, U3/P4, CE1
U2/P31, CB9,
U2/P29, U3/P1, CE2, R11
17. R.G.B. LEVEL CHECK
- U2/P25, 26, 27 or FB2, 3, 4/P2
END

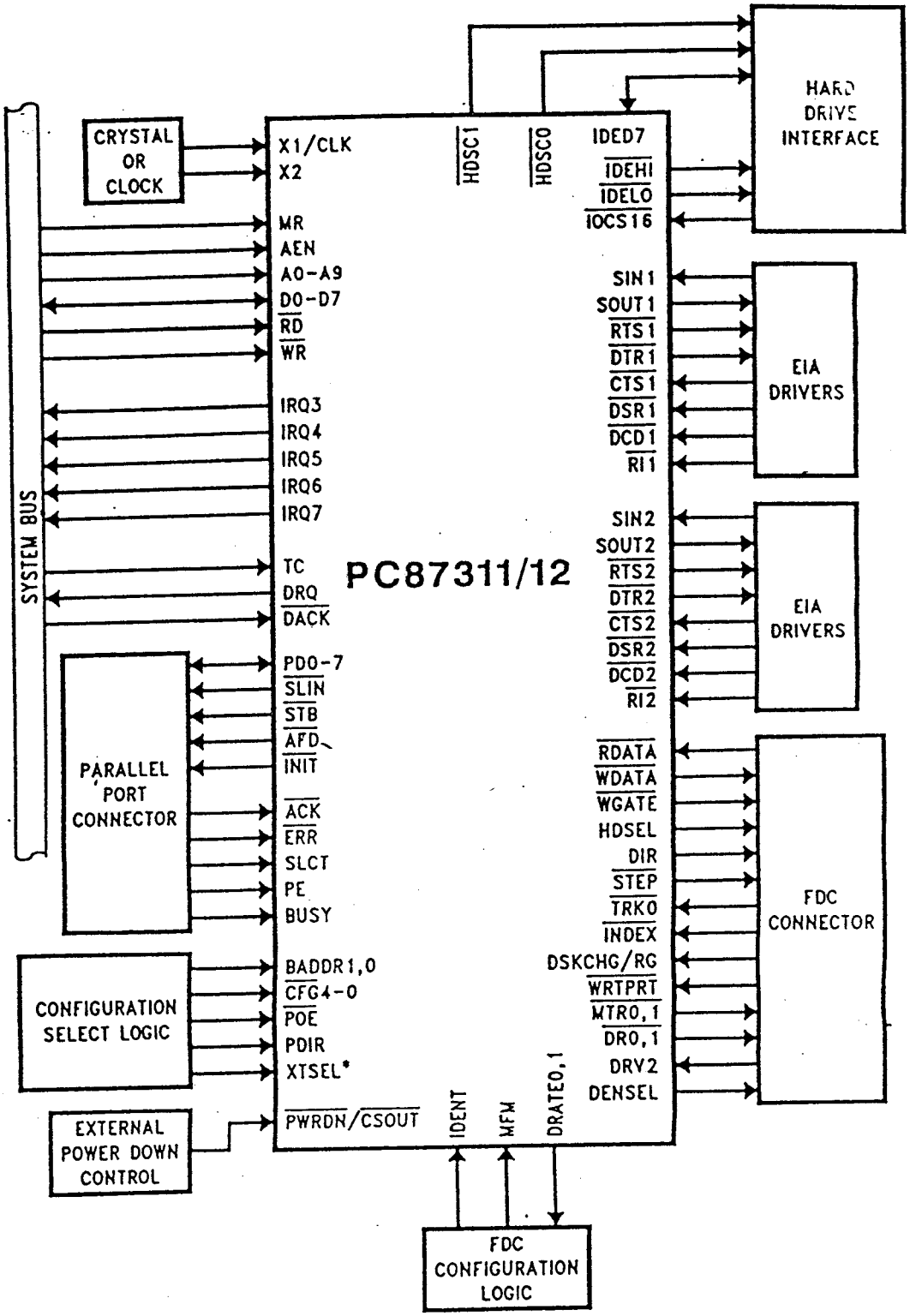
* Pxxx : Pin Number xxx

POWER SUPPLY DEBUGGING FLOW

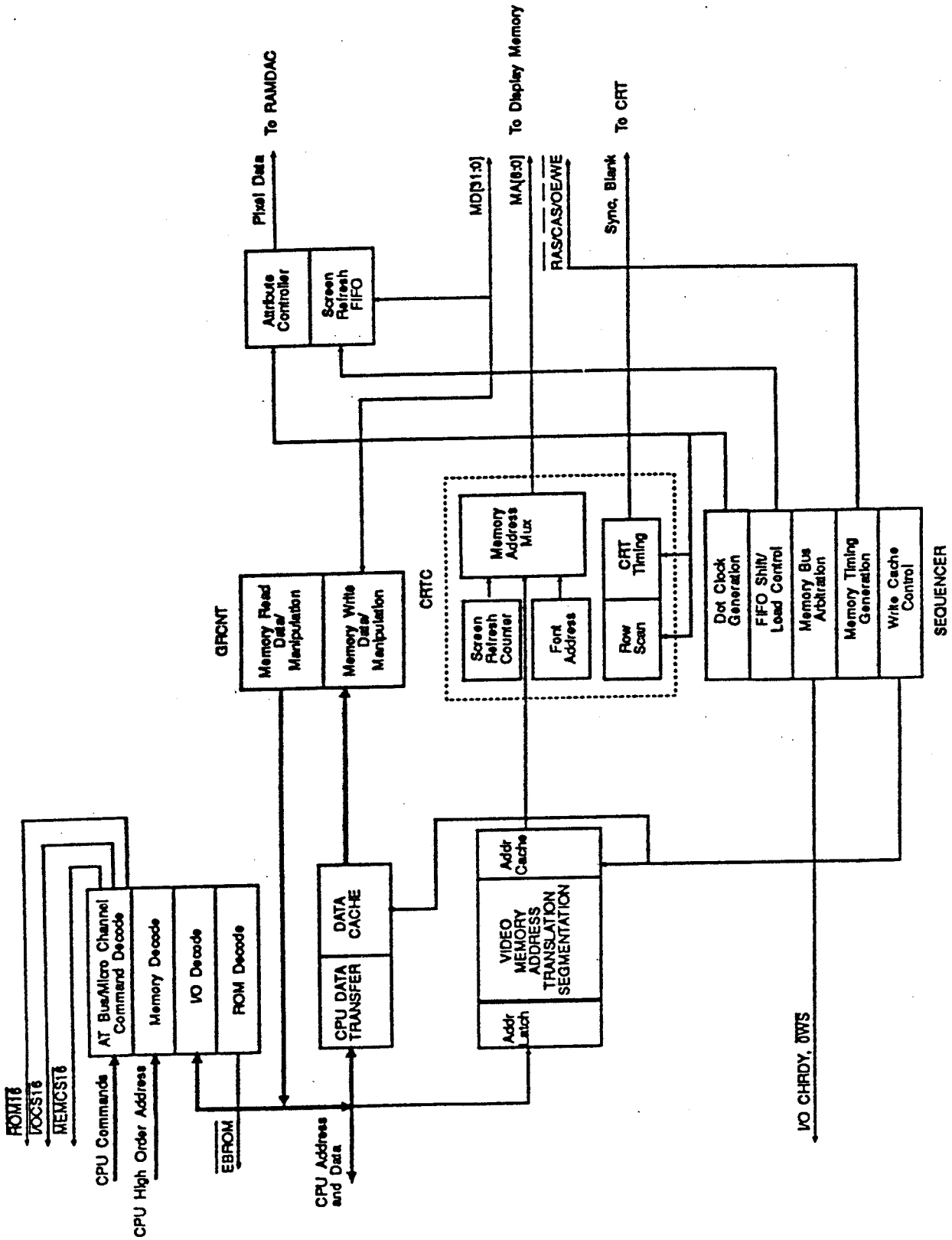

1. NO POWER
A. CHECK THE DC OUTPUT
- CONNECTOR(P5) :
- PIN1 (YELLOW) : +12V
- PIN2 (BROWN) : -12V
- PIN3-6 (BLACK) : GND
- PIN 7 (BLUE) : -5V
- PIN 8-10 (RED) : +5V
B. CHECK THE LINE VOLTAGE SELECTOR SWITCH 115V OR 230V
C. CHECK THE INPUT FUSE F1 OPEN 250V 3.15A/3.0A OR EQUIV.
D. CHECK THE FET(Q1)
E. CHECK THE RESISTOR(R32) 2K Ohm 1/4W
F. CHECK THE IC-PWM(M1) 3842 VCC INPUT VOLTAGE(PIN 7) MAX 30V
G. CHECK THE IC-PWN(M1) 3842 Vref VOLTAGE (PIN 8) +5V
2. OUTPUT VOLTAGE +5V, +12V
CHECK THE DIODE (D14) MBR2045CT AND DIODE(D13) FES8CT SHORT
3. OUTPUT VOLTAGE -12V, -5V
CHECK THE IC-REGULATOR(M3) 7912 AND IC-REGULATOR(M4) 7905 SHORT OR OPEN
4. OUTPUT VOLTAGE TOO HIGH OR LOW
CHECK THE VOLTAGE ADJUSTMENT ; THE +5V DC OUTPUT SHALL BE ADJUSTABLE FROM 4.75V TO 5.5V DC
5. NO OPERATING FAN
A. CHECK THE FAN CONNECTOR(CON4) CONTACT OR FAN WIRE OPEN
B. CHECK THE FAN CONNECTOR INPUT VOLTAGE (+12V)
C. CHECK THE FAN DAMAGE
END



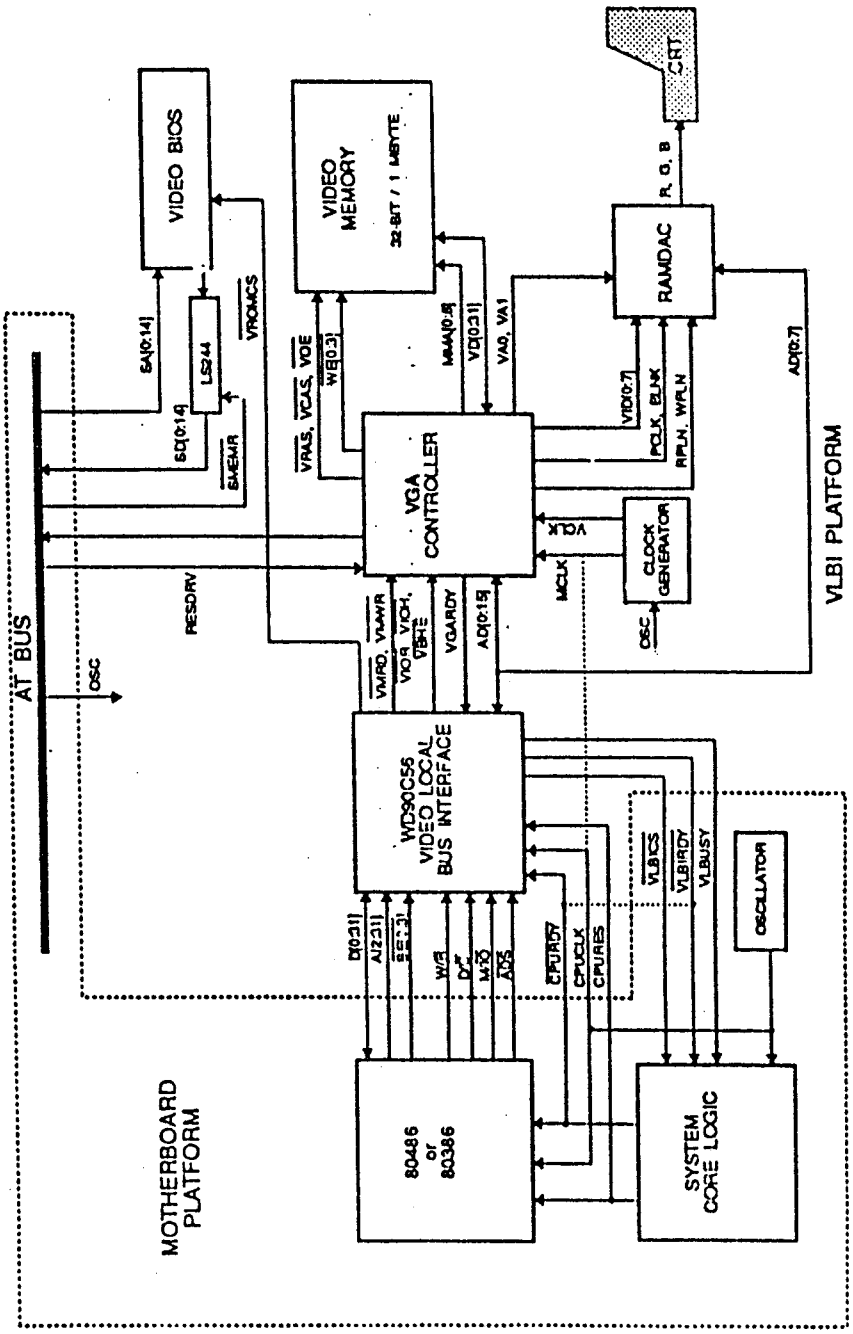
VL82C486 BLOCK DIAGRAM



PC87311 I/O SYSTEM BLOCK DIAGRAM



WD90C31 BLOCK DIAGRAM



VLBI SYSTEM BLOCK DIAGRAM

CUSTOM CHIP OVERVIEW

VL82C486 SYSTEM CONTROLLER

NO.	SYMBOL	I/O	DESCRIPTION
145 - 142 140 139 137 - 133 131 - 116	A31 - A29 A26 - A2	IO	ADDRESS BUS
71	ADS#	IO	ADDRESS STATUS
82 - 79	BE3#-BE0#	IO	BYTE ENABLE BITS3 - BITS 0
63	BLAST#	IO	BURST LAST
65	BRDY#	IO	BURST READY
53	CLK	O	CLOCK
54	CLKIN	I	INPUT CLOCK
70	M/IO#_DK0	IO	MEMORY INPUT/OUTPUT OR DMA ACKNOWLEDGE BIT 0
69	D/C#_DK1	IO	DATA CONTROL OR DMA ACKNOWLEDGE BIT 1
68	W/R#_DK2	IO	WRITE/READ OR DMA ACKNOWLEDGE BIT 2
17 - 21 23 - 27 29 - 32 34 - 51	D31-D0	IO	CPU DATA BUS BITS THROUGH 0
61	EADS#	O	EXTERNAL POINT ERROR
57	FERR#	I	FLOATING POINT ERROR
67	HOLD	O	HOLD REQUEST
56	IGNNE#	IO	IGNNE#
84	INTR	O	INTERRUPT REQUEST
73	KEN#	O	CACHE ENABLE
78	NMI	O	NON-MASKABLE
62	RDY#	IO	READY
58	RESCPU	O	RESET CPU
59	TCLK2	I	CLOCK
66	HLDA	I	HOLD ACKNOWLEDGE
94- 91	CAS3- CAS0	O	COLUMN ADDRESS STRIBE BITS0 - BIT3
89- 86	MBE3- MBE0	O	MEMORY BYTE ENABLE BITS3 - BIT0
108 - 105 103 -99 97	MA10 - MA1	O	MEMORY ADDRESS BUS BITS 10 - BIT1
184 - 186 188 - 192 194 - 201	SD15-SD0	IO	SYSTEM DATA BITS 15 - 0
153	IOCHRDY	IO	I/O SYSTEM MEM. READ
174	SMEMR#	O	SYSTEM MEMORY READ

NO.	SYMBOL	I/O	DESCRIPTION
98	MA0X	O	MEMORY ADDRESS BUS BIT0, BANKS 0 AND 2
95	MA0Y	O	MEMORY ADDRESS BUS BIT0, BANKS 1 AND 3
169	MDENX#	O	MEMORY DWORD ENABLE BITSX AND Y
170	MDENY#		
167- 164	PAR3-PAR0	IO	PARITY BITS3 - BITS 0
114	RAMW#	IO	RAM WRITE OUTPUT
113- 110	RAS3#- RAS0#	O	ROW ADDRESS STROBE BITS 3 - BITS 0
76	BLKA20#	IO	BLOCK A20 OUTPUT
55	FLUSH#	IO	CACHE FLUSH OUTPUT
72	MISS#	I	CACHE MISS
74	EALE#	IO	EARLY ADDRESS LATCH ENABLE OUTPUT
83	FMPRG#	IO	FLASH MEMORY PROGRAM OUTPUT
146	LBA#	I	LOCAL BUS ACCESS
162	PPICS#	IO	PERIPHERAL CHIP SELECT OUTPUT
178	POWERGOOD	I	SYSTEM POWER-ON RESET
163	ROMCS#	IO	ROM CHIP SELECT OUTPUT
75	SLEEP#	I	SLEEP MODE
85	SPKR/TRI#	IO	SPEAKER OR TRI-STATE
155	TURBO	I	TURBO MODE
206	WEIRQ	I	WEITEK NUMERIC COPROCESSOR INTERRUPT
183	AEN	O	ADDRESS ENABLE
182	BALE	O	BUS ADDRESS LATCH EN.
158	BUSOSC	I	SYSTEM BUS CLOCK
180	DKEN	O	DMA ACK. ENABLE INPUT
202- 204 1-4	DRQ7-DRQ5 DRQ3-DRQ0	I	DMA REQUEST BITS7-5 3 - 0
152	IOCHCK#	I	/O CHANNEL READY
148	IOCS16#	I	16BIT I/O CHIP SELECT
160	IOW#	IO	INPUT/OUTPUT WRITE
161	IOR#	IO	INPUT/OUTPUT READ
5,6, 7-10 11- 15 207 205	IRQ15,14 12 - 9 7 - 3 1,- IRQ8#	I	INPUT REQUESTS
181	MASTER#	I	BUS MASTER
147	MEMCS16#	I	16BIT MEM. CHIP SEL.
177	MEMR#	IO	MEMORY READ / WRITE
179	MEMW#		
151	OSC	I	OSCILLATOR INPUT
157	REFRESH#	IO	MEMORY REFRESH
173	RSTDRV	O	RESET
149	SA1, SA0	IO	SYSTEM ADDR. BITS 1,0
150			
171	SBHE#	IO	SYSTEM BYTE HIGH EN.
175	SYSCLK	O	SYSTEM CLOCK
159	TC	O	TERMINAL COUNT
154	WS0#	I	WAIT STATE TERMINATE
VSS	GROUND 0 V		16, 28, 52, 60, 77, 90 104, 115, 132, 138, 156, 168 187, 208
VDD	OWR + 5V		22, 33, 64, 96, 109 141, 172, 193

PC87311 SUPER I/O CONTROLLER

NO.	SYMBOL	I/O	DESCRIPTION
21 - 30	A9-A0	I	ADDRESS
85	ACK#	I	ACKNOWLEDGE
78	AFD#	O	AUTOMATIC FEED XT
20	AEN	I	ADDRESS ENABL
55	BADDR0	I	BASE ADDRESS
73	BOUT1,2	O	BAUD OUTPUT
65			
84	BUSY	I	BUSY
65	CFG0-4	I	DEFAULT
66			- CONFIGURATION
71			
73			
74			
3	CSOUT#	O	CHIP SELECT OUTPUT
72	CTS1,2#	I	CLEAR TO SEND
64			
10-17	D7-D0	I/O	DATA
5	DACK#	I	DMA ACKNOWLEDGE
77	DCD1,2#	I	DATA CARRIER DETECT
69			
48	DENSEL	O	DENSITY SELECT
41	DIR#	O	DIRECTION
44	DR0,1#	O	DRIVE SELECT 0,1
45			
52	DRATE0,1	O	DATA RATE 0,1
51			
4	DRQ	O	DMA REQUEST
49	DRV2#	I	DRIVE2
32	DSKCHG#	I	DISK CHANGE
76	DSR1,2#	I	DATA SET READY
68			
71	DTR1,2#	O	DATA TERMINAL READY
63			
79	ERR#	I	ERROR
58	HCS0#	O	HARD DRIVE CHIP
57	HCS1#	O	SELECT 0,1
34	HDSEL#	O	HEAD SELECT
60	IDED7	I/O	IDE BIT 7
56	IDEHI#	O	IDE HIGH BYTE
55	IDELO#	O	IDE LOW BYTE
54	IDENT	I	IDENTITY
47	INDEX#	I	INDEX
80	INIT#	O	INITIALIZE
59	IOCS16#	I	I/O CHIP SELECT 16 BIT
1	IRQ3	O	INTERRUPT 3
100	4		4
98	5		5
97	6		6
96	7		7
2	MR	I	MASTER RESET

NO.	SYMBOL	I/O	DESCRIPTION
53	MFM	I/O	MFM
46	MTR0,1#	O	MOTOR SELECT 0,1
43			
94-91	PD0-7	I/O	PARALLEL PORT DATA
89-86			
57	PDIR	I	PARALLEL PORT DIRECTION
3	PDWN#	I	POWER DOWN
83	PE	I	PARALLEL PORT OUTPUT ENABLE
19	RD#	I	READ
5	RDATA#	I	READ DATA
70	RI1,2#	I	RING INDICATOR
62			
74	RTS1,2#	O	REQUEST TO SEND
66			
75	SIN1,2	I	SERIAL INPUT
67			
82	SLCT	I	SELECT
81	SLIN#	O	SELECT INPUT
73	SOUT1,2#	O	SERIAL OUTPUT
65			
95	STB#	O	DATA STROBE
40	STEP#	O	STEP
6	TC	I	TERMINAL COUNT
37	TRK0#		TRACK 0
33	VDDA		ANALOG SUPPLY
50	VDDB,C		DIGITAL SUPPLY
99			
31	VSSA		ANALOG GROUND
42	VSSB-E		DIGITAL GROUND
9			
90			
61			
18	WR#	I	WRITE
39	WDATA#	O	WRITE DATA
38	WGATE#	O	WRITE GATE
36	WP#	I	WRITE PROTECT
7	X1,X2	I	CRYSTAL 1,2
8		O	
63	XTSEL	I	XT SELECT

NOTICE : MULTIPLE DEFINITION PIN

WD90C31 HIGH PERFORMANCE VGA CONTROLLER

NO.	SYMBOL	I/O	DESCRIPTION
68	RESET	I	RESET
130	MCLK	I	MEMORY CLOCK
121	VCLK0,	I	VIDEO CLOCK 0, 1, 2
122	VCLK1	I/O	
123	VCLK2	I/O	
57	A23 - A16	I	ADDRESS BUS A23- A16
56			
53 - 49			
79			
80 - 87	DA15-DA0	I/O	DATA/ADDRESS BUS
92 - 99			
61	ALE	I	ADDRESS LATECH ENA.
70	IOCHRDY	O	IO CHANNEL READY
62	IRQ	O	INTERRUPT REQUEST
59	MEMCS16#	O	MEMORY CHIP SELECT 16 BITS
75	EIO#	I	ENABLE I/O
77	EBROM#	O	ENABLE BIOS ROM
104	HTL#	O	ENABLE HIGH-TO-LOW
63	EMEM	I	ENABLE MEMORY
60	BHE#	I	BYTE HIGH ENABLE
69	0WS#	O	0 WAIT STATE
66	MRD#	I	MEMORY READ
67	MWR#	I	MEMORY WRITE
64	IOR#	I	I/O READ
65	IOW#	I	I/O WRITE
58	IOCS16#	I/O	I/O CHIP SEL. 16 BITS
91	DIR	O	DIRECTION CONTROL
78	EDBUFH#	O	EN. DATA BUF. HIGH
100	EDBUFL#	O	EN. DATA BUF. LOW
88	EABUF#	O	EN. ADDR. BUFFER
76	ROM16#	I/O	BIOS ROM SEL. 16 BITS
26	CAS#	O	COLUMN ADDR. STROBE
24	RAS#	O	ROW ADDR. STROBE
12	RAS3#	O	ROW ADDR. STROBE 3
11	RAS4	O	ROW ADDR. STROBE 4
132	OE#	O	OUTPUT ENABLE

NO.	SYMBOL	I/O	DESCRIPTION
39	WE0#	O	WRITE ENABLE MD7 .. 0
14	WE1#	O	WRITE ENABLE MD15.. 8
142	WE2#	O	WRITE ENABLE MD23..16
133	WE3#	O	WRITE ENABLE MD31..24
129	USR0	O	* TO CONTROL SPECIAL
128	USR1	O	CARD/SYSTEM FEATURES
134-141	MD31..MD0	I/O	DISPALY MEMORY DATA
3-10			
15-17			
19-23			
27-34			
48-40	MA8 - MA0	O	MEMORY ADDRESS
119-112	VID7-VID0	O	VIDEO VD7-VD0 PIXCEL VIDEO DATA OUTPUT TO DAC
106	RPLT#	O	READ PALETTE
105	WPLT#	O	WRITE PALETTE
111	PCLK	O	PIXEL CLOCK
103	BLANK#	O	BLANK
102	HSYNC	O	HORIZONTAL SYNC.
101	VSYNC	O	VERTICAL SYNC.
127	MDET	I	MONITOR DETECT
125	EXVID#	I	EN. EXTR. VIDEO DATA
124	EXPCLK#	I	EN. EXTR. PIXCEL CLK.

VCC	+ 5V	2, 35, 74, 107
VSS	GROUND	13, 25, 38, 55, 71 89, 110, 120, 131, 143
		1, 18, 36, 37, 54, 72 73, 90, 108, 109, 126, 144 * THESE PINS ARE NOT CONNECTED IN THE 144P EIAJ

WD90C56 VIDEO LOCAL BUS INTERFACE

NO.	SYMBOL	I/O	DESCRIPTION
68 66- 63 59- 54 62 41 53- 51 8-7 5-4 40 157 - 153 3 80 72- 71	A2 .. A31	I	CPU ADDRESS
43- 46	BE0#- BE3#	I	BYTE ENABLE 0 - 3
42 23 - 28 11- 18 21 22 31 - 36 152 - 142	ADS# PD0..31	I I/O	CPU ADDR. STROBE CPU DATA BUS
69 141 138 137 135 - 131 129 127 - 122	READY# AD0..AD15	O I/O	READY ADDRESS AND DATA BUS
109 78 119 - 116 114 - 111 108 - 101	VBE3# VD16..31	I/O I/O	VALID BYTE ENABLE HIGH DATA BUS * FOR VGA CHIPS WHICH HAVE A 32-BIT DATA INTERFACE

NO.	SYMBOL	I/O	DESCRIPTION
83	VGARDY	I	VGA READY
87	VBHE#	O	VGA BYTE HIGH ENABLE
97	VMRD#	O	ACTIVE LOW COMMANDS
96	VMWR#	O	TO THE VGA CHIP
84	VIOR#	O	
85	VIOW#	O	
140	TEST	I	TEST
61	VLBICS#	O	VLBI CHIP SELECT
29	HLDREQ	I	HOLD REQUEST
2	CLK486	I	CLOCK486
159	CLK2386	I	CLOCK 2386
82	VMCLK	I	VLBI VGA CLOCK
73	CPURES	I	CPU RESET
75	RESET#	I	RESET
89 91- 93 98- 99	LA16..21	I/O	UPPER 6-BITS OF THE 22 BIT ADDRESS TO THE VGA CHIP
6	BOFF#	O	BOFF
67	VLBUSY	O	VLBI BUSY
77	PWRDWN#	I	POWER DOWN
79	VBROM#	O	VIDEO BIOS ROM
76	RDYIN#	I	USED FOR SYHCRONIZING WITH CPU CYCLES
86	CPUconfig#	I	PROCESSOR SEL. PIN HIGH = 486 LOW = 386
VSS	GROUND		1, 10, 19, 30, 81, 90, 110, 121 128, 139,
VCC	+5V		9, 20, 60, 74, 115, 120, 136, 160

POWER SUPPLY OVERVIEW

The POWER SUPPLY povides power for all of the option cards installed in the system unit, Mother Board, Floppy Disk Drive, Hard Disk Drive and Keyboard.
Your power supply is 100 Watts, 4 output level SMPS(Switching Mode Power Supply).

FUNCTIONAL DESCRIPTION

Input requirements

The Power Supply is able to operate at the frequency of either 50±3Hz and also can run at 90V to 132V, or 180V to 264V AC single phase.

Inrush current shall be less than the maximum current of its critical components (Including power switch, fuse, bulk rectifiers and Surge limiting device) for all conditions of line voltage.

Output Characteristics

DC Ouptput

Output voltage	Wire Color	Tolerance(Accuracy	Load Current Minimum-Maximum
+5 Vdc	Red	±5%	1.5A - 13.0A
+12Vdc	Yellow	±5%	0.2A - 2.5A(peak4.0A)
-12Vdc	Brown	±5%	0A - 0.3A
-5Vdc	Blue	±5%	0A - 0.1A

NOTE : The wire color of GND line is BLACK

Voltage Adjustment

+5Vdc output is adjustable from 4.75Vdc to 5.25Vdc. The +5Vdc output at the power supply output connector should be adjusted to between 4.9Vdc and 5.1Vdc by the manufacturer for typical load operation.

Over Voltage Protection

This feature is only for the +5Vdc output (between outputs or between an output and DC return). If any short condition occurs, it shall cause no damage to the power supply or the system attached to the power supply.

Over Current Protection

This feature is applied to the two outputs, +5Vdc and +12Vdc. If the load current of its output exceeds maximum values, 13A to 20A on the 5Vdc and 5A to 8A on the 12 Vdc, the power supply shall shutdown and cause no damage to the system.

PIN ASSIGNMENTS

Power /connector for Disk Drive(for 5.25 inch FDD or HDD)

Pin No.	Color	Voltage(Vdc)
1	Yellow	+12Vdc
2	Black	GND(Return)
3	Black	GND(Return)
4	Red	+5 Vdc

Power Connector for Disk Drive(for 3.5 inch FDD)

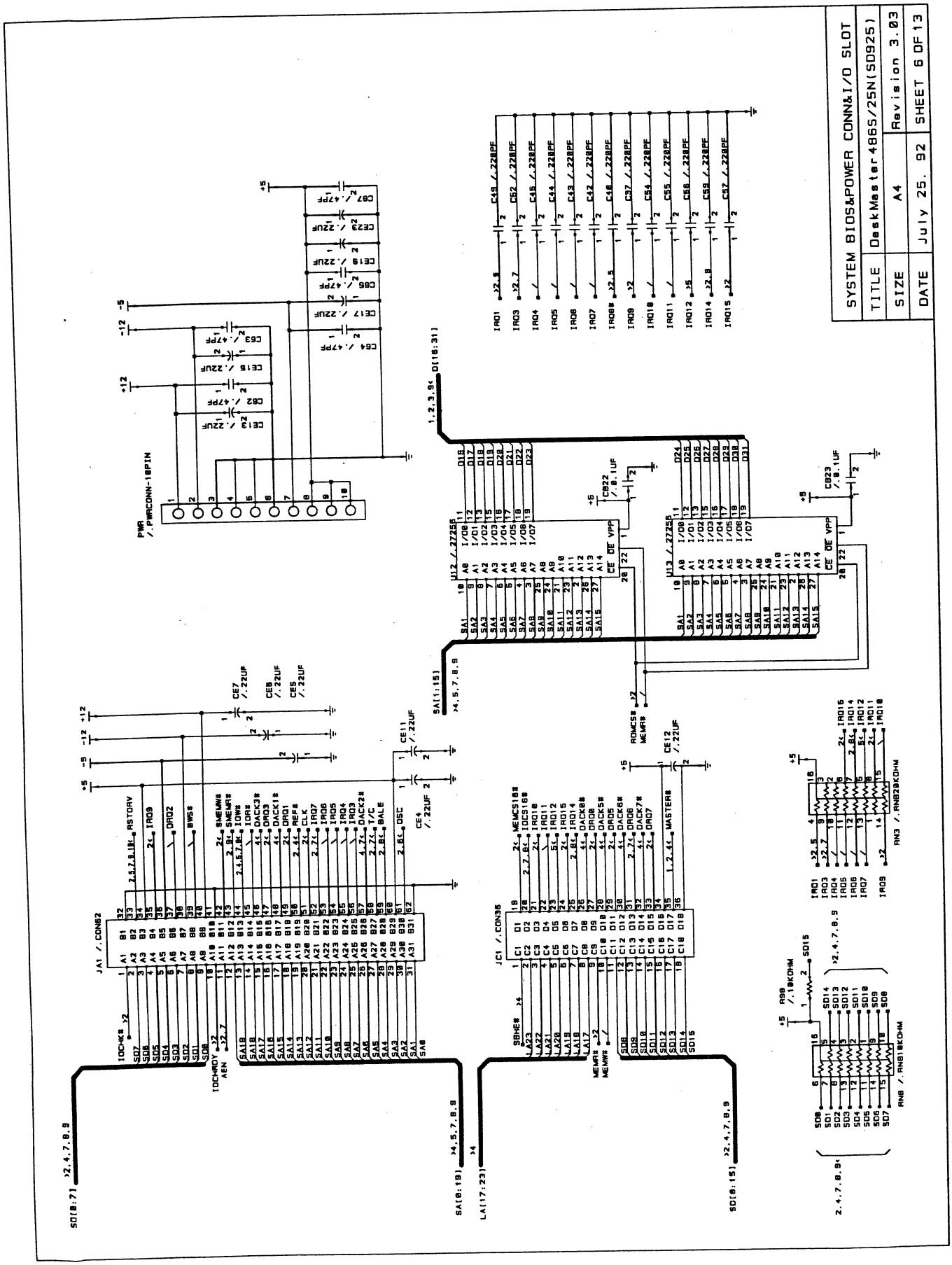
Pin No.	Color	Voltage(Vdc)
1	Red	+5 Vdc
2	Black	GND(Return)
3	Black	GND(Return)
4	Yellow	+12Vdc

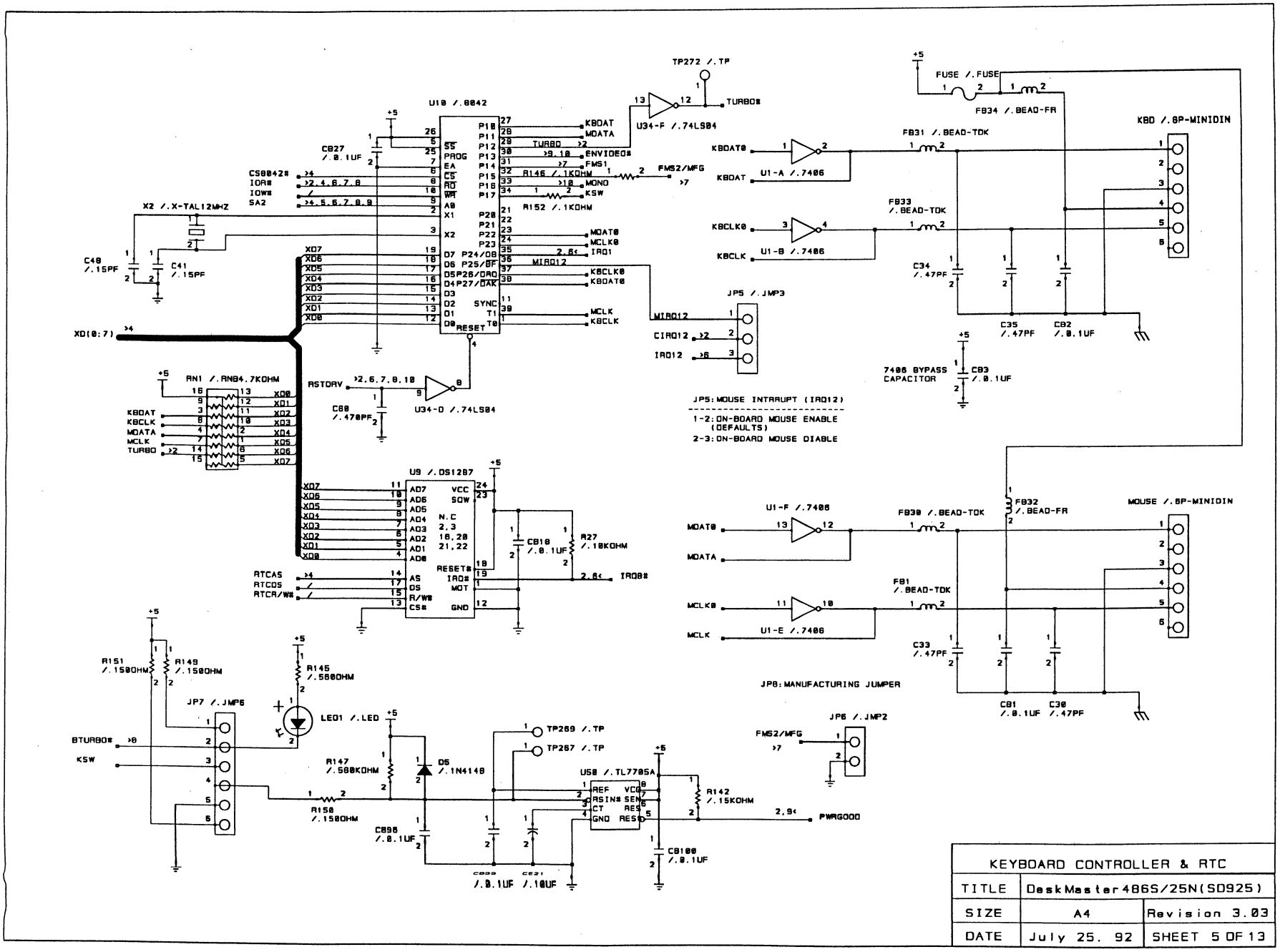
Power Connector for Mother Board

Pin No.	Color	Voltage(Vdc)
1	Yellow	+12Vdc
2	Brown	-12Vdc
3-6	Black	GND(Return)
7	Blue	-5 Vdc
8-10	Red	+5 Vdc

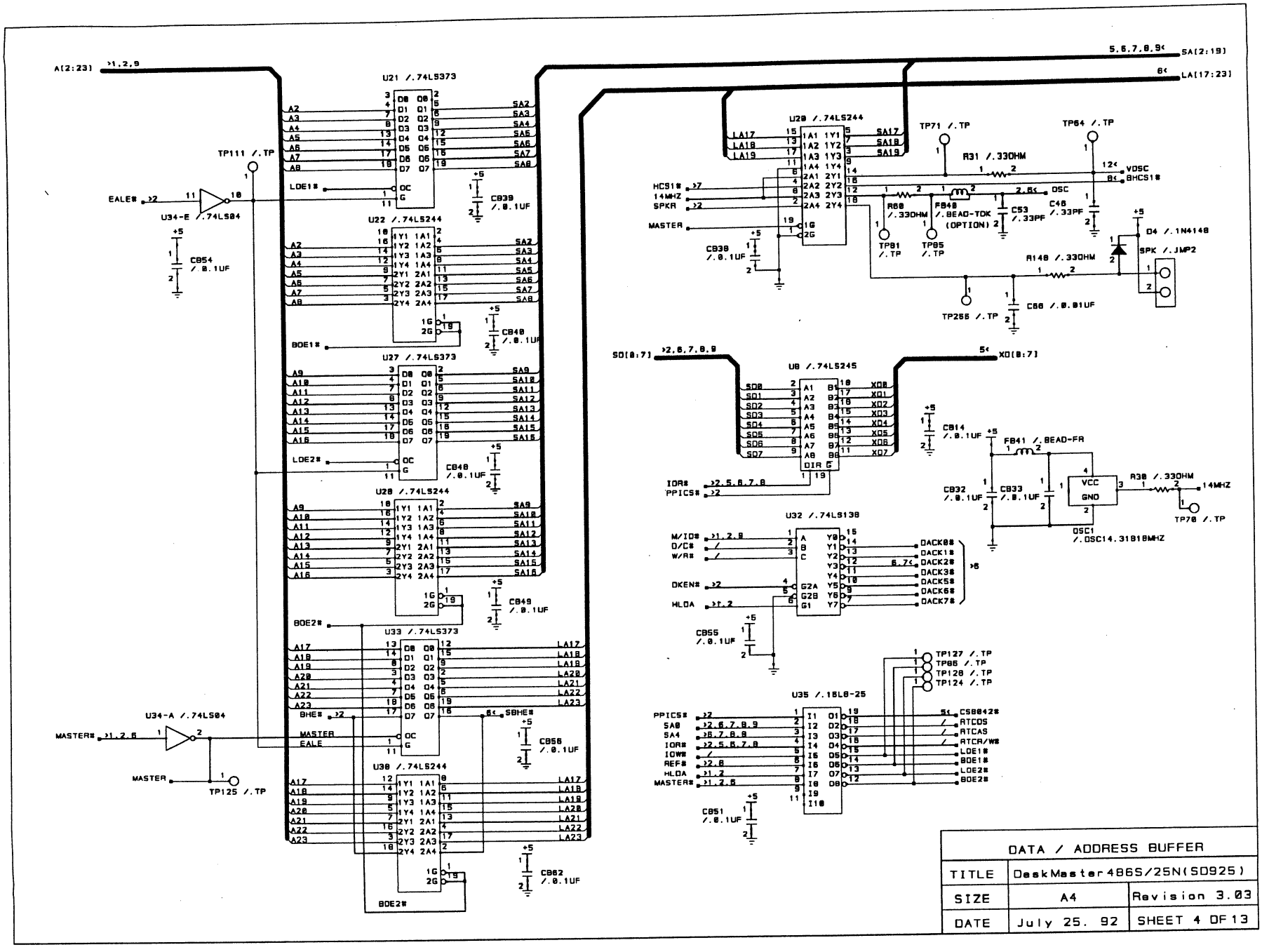
4. SCHEMATIC & PCB LAYOUT

MAIN BOARD SCHEMATIC
MAIN BOARD COMPONENT LAYOUT
MAIN BOARD PCB PATTERN
BUS BOARD SCHEMATIC
BUS BOARD COMPONENT LAYOUT
POWER SUPPLY SCHEMATIC
POWER SUPPLY COMPONENT LAYOUT

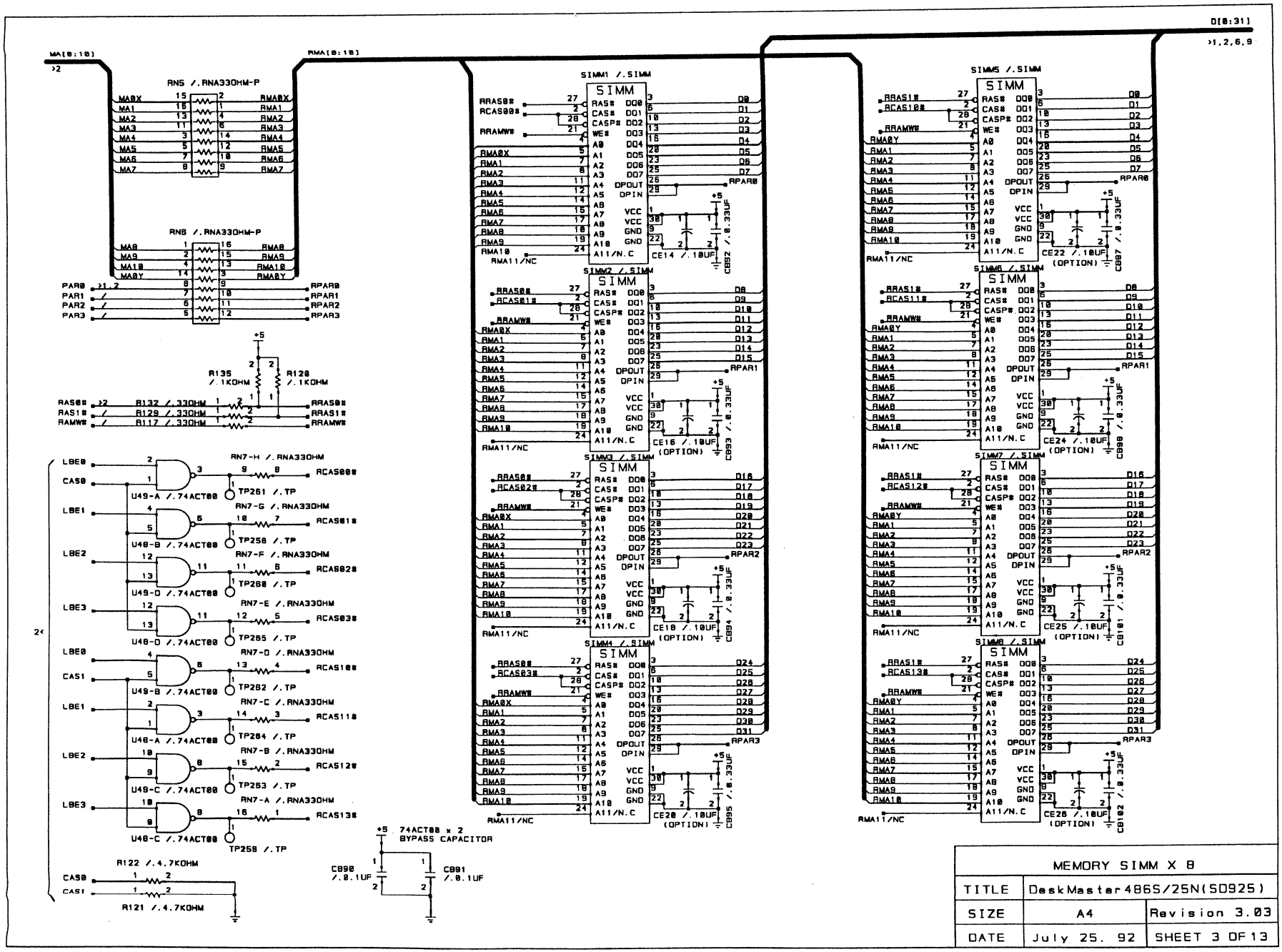

SYSTEM BIOS&POWER CONN&I/O SLOT
TITLE DeskMaster4865/25N(SD925)
SIZE A4 Revision 3.03
DATE July 25. 92 SHEET 6 OF 13
PWR /.PWRCONN-10PIN
JA1 /.CON62
JC1 /.CON36
U12 /.27256
U13 /.27256
RN3 /.RN820KOHM
RN8 /.RN810KOHM
R99 /.10KOHM
SD[8:7]
SD[6:15]
SA[0:19]
LA[17:23]
SA[1:15]
D[16:31]



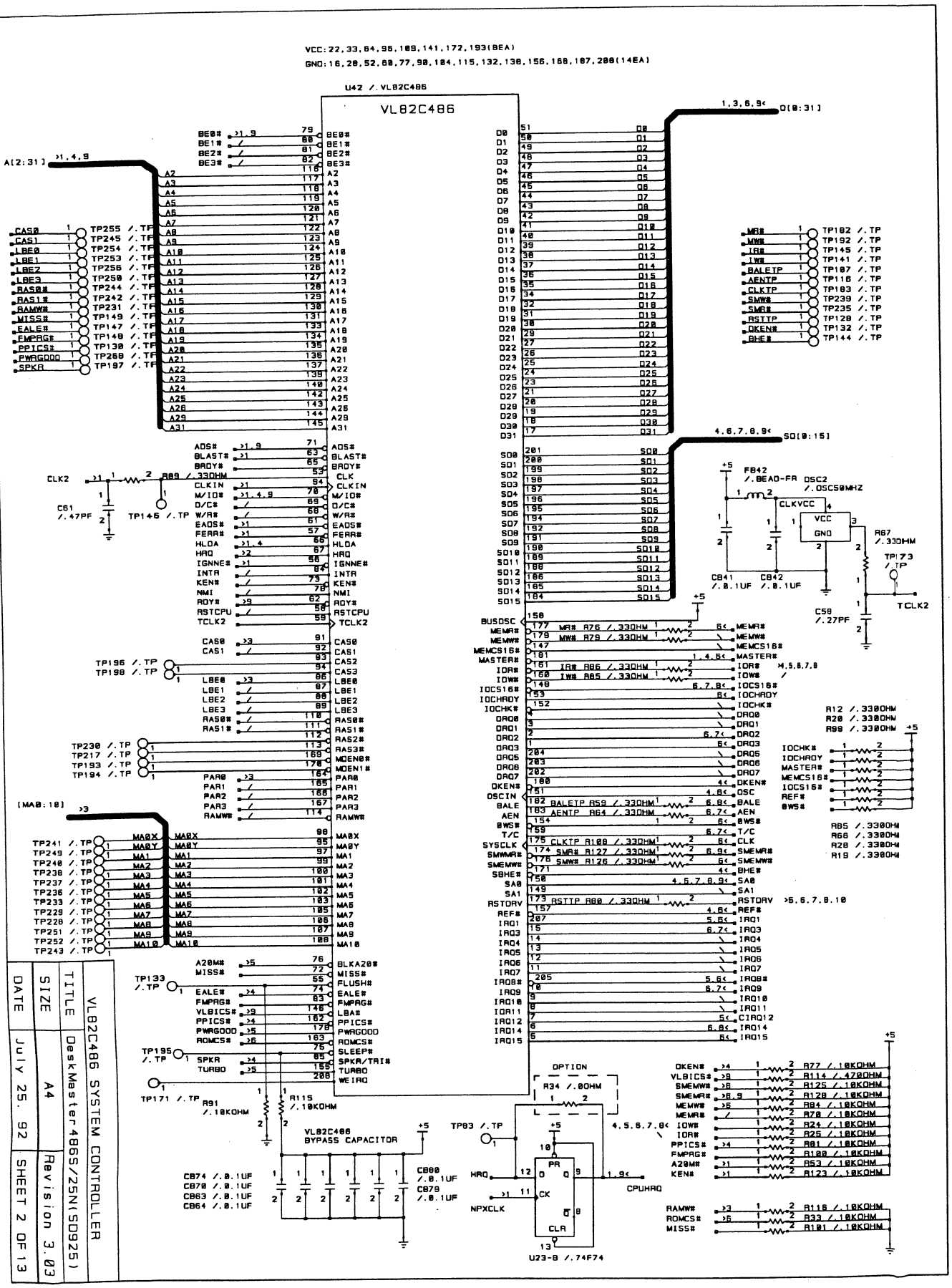
KEYBOARD CONTROLLER & RTC		
TITLE	DeskMaster486S/25N(SD925)	
SIZE	A4	Revision 3.03
DATE	July 25. 92	SHEET 5 OF 13



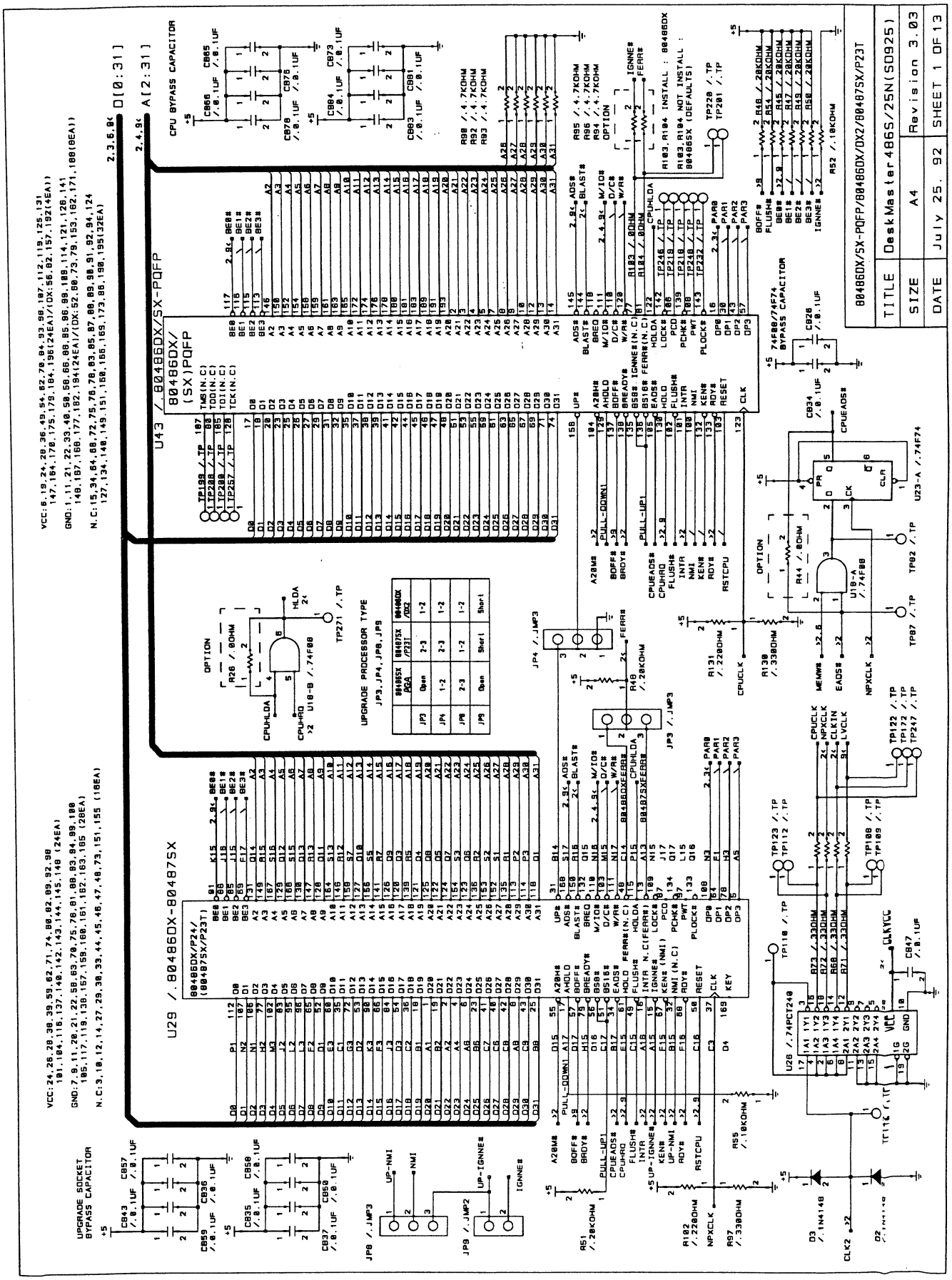
DATA / ADDRESS BUFFER		
TITLE	DeskMaster486S/25N(SD925)	
SIZE	A4	Revision 3.03
DATE	July 25. 92	SHEET 4 OF 13

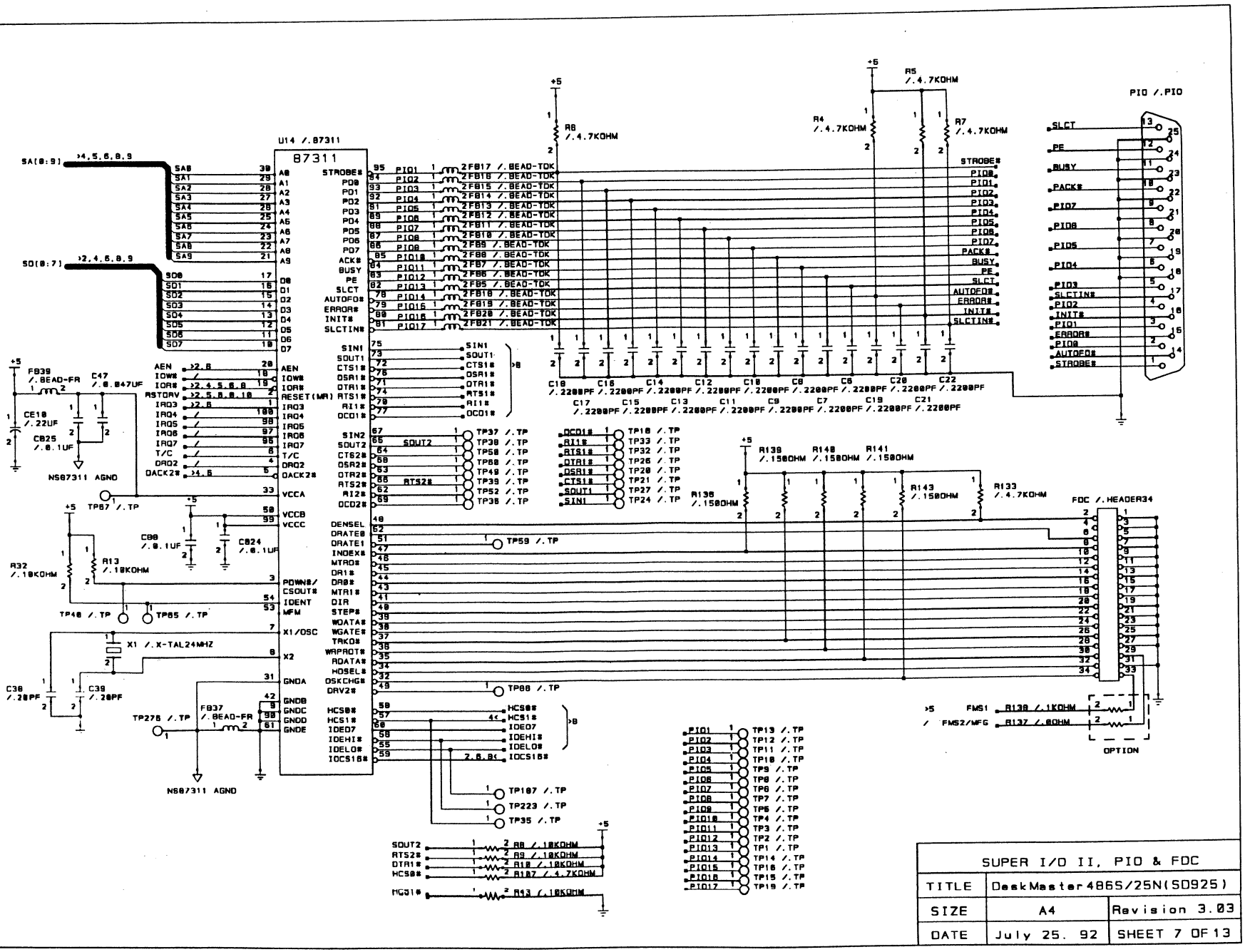


MEMORY SIMM X 8		
TITLE	DeskMaster486S/25N(SD925)	
SIZE	A4	Revision 3.03
DATE	July 25, 92	SHEET 3 OF 13

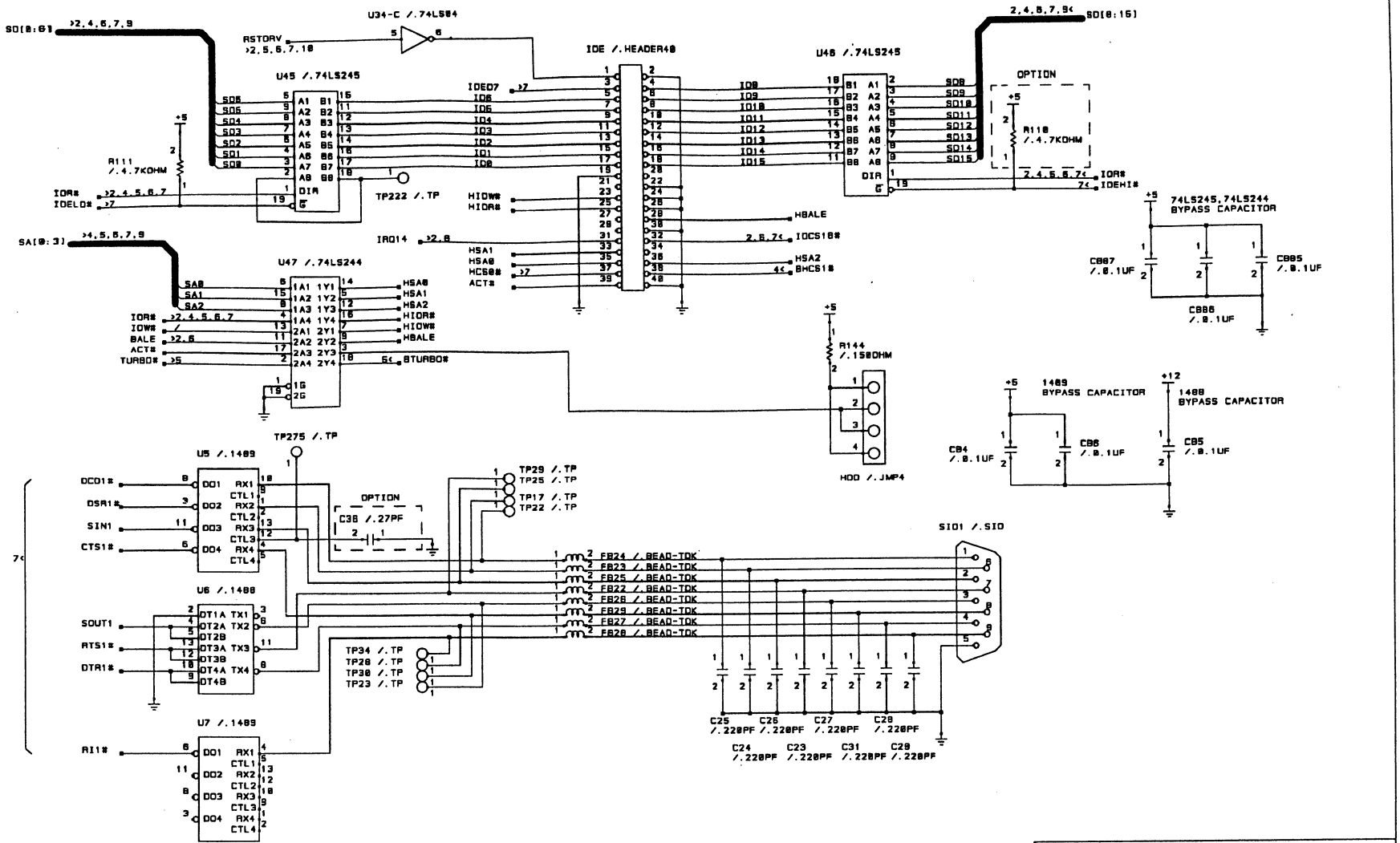

VCC: 22, 33, 64, 96, 109, 141, 172, 193(8EA)
GND: 16, 28, 52, 68, 77, 90, 104, 115, 132, 138, 156, 168, 187, 200(14EA)
U42 /.VL82C486
VL82C486
A[2:31]
D[0:31]
SD[0:15]
CLK2
TCLK2
CPUHRQ
NPXCLK
OPTION
R34 /.0OHM
VL82C486 BYPASS CAPACITOR
U23-B /.74F74
VL82C486 SYSTEM CONTROLLER
TITLE
DeskMaster486S/25N(SD925)
SIZE
A4
DATE
July 25, 92
SHEET 2 OF 13
Revision 3.03

MAIN BOARD SCHEMATIC

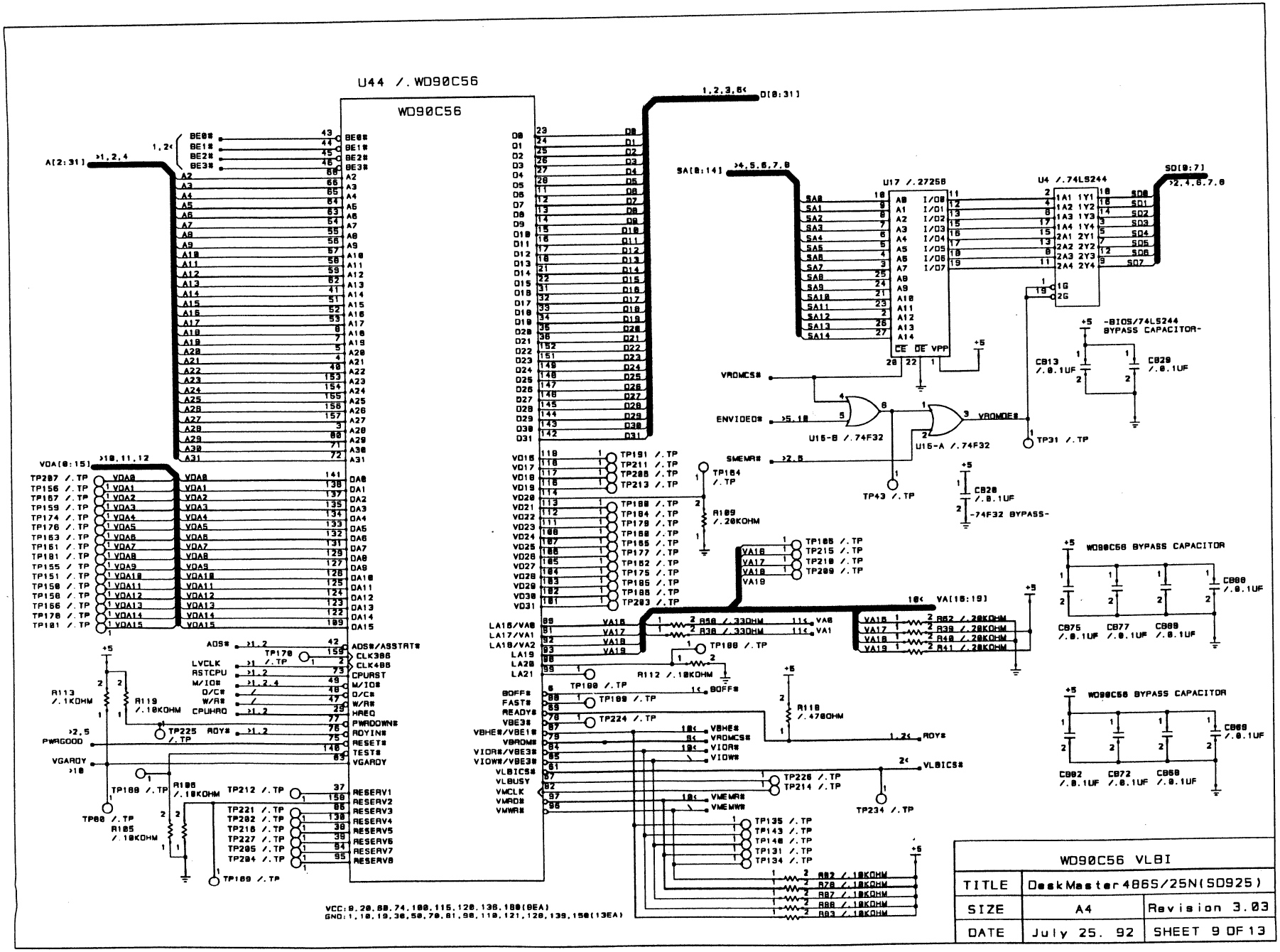


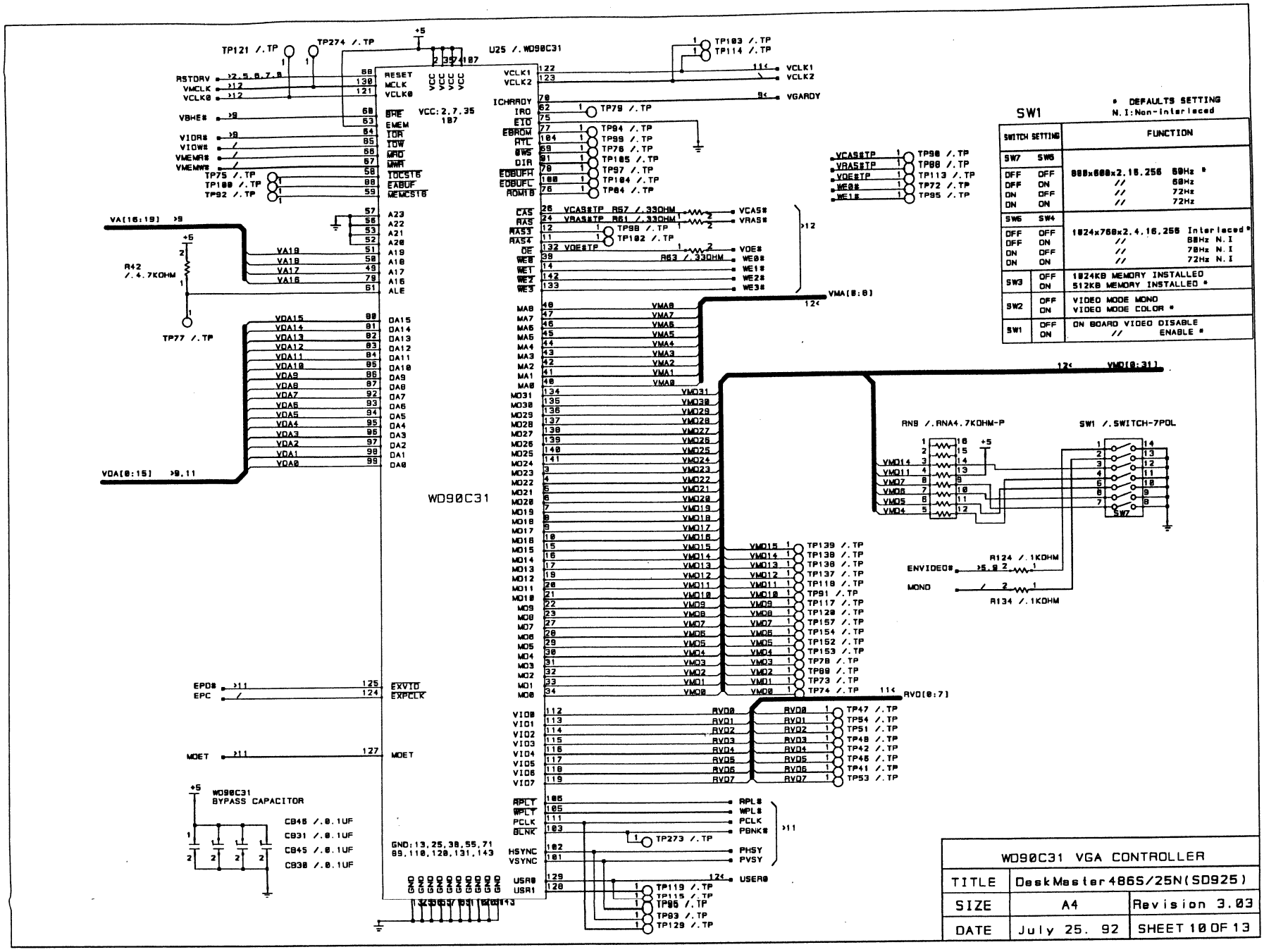


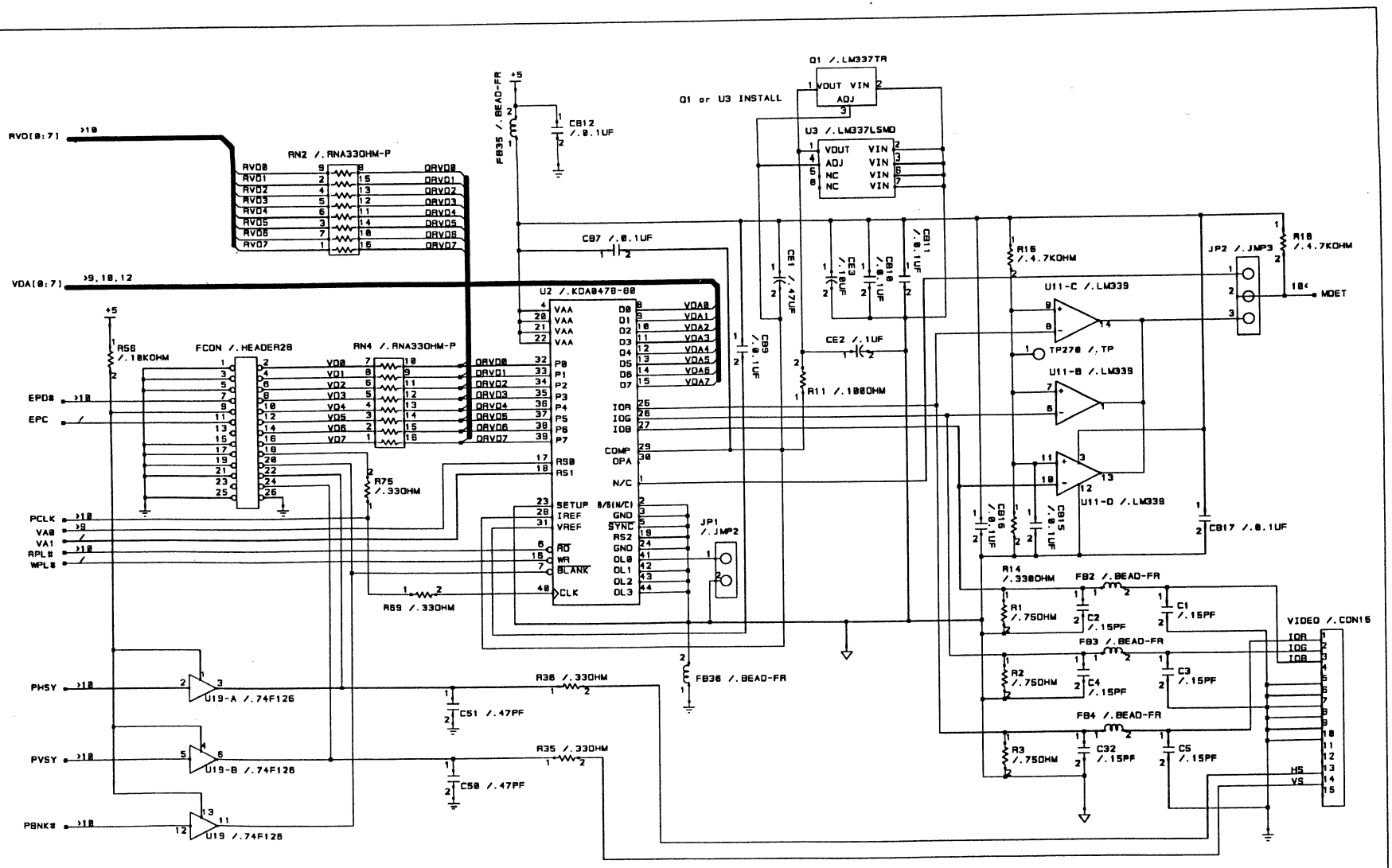
SUPER I/O II, PIO & FDC		
TITLE	DeskMaster486S/25N(SD925)	
SIZE	A4	Revision 3.03
DATE	July 25. 92	SHEET 7 OF 13



SUPER I/O II IDE & 1 SIO		
TITLE	DeskMaster486S/25N(SD925)	
SIZE	A4	Revision 3.03
DATE	July 25. 92	SHEET 8 OF 13


U44 /.WD90C56
WD90C56
U17 /.27256
U4 /.74LS244
U15-B /.74F32
U15-A /.74F32
-BIOS/74LS244 BYPASS CAPACITOR-
WD90C56 BYPASS CAPACITOR
WD90C56 BYPASS CAPACITOR
-74F32 BYPASS-
WD90C56 VLBI
TITLE
DeskMaster486S/25N(SD925)
SIZE
A4
Revision 3.03
DATE
July 25. 92
SHEET 9 OF 13


U25 /.WD90C31
WD90C31
SW1
* DEFAULTS SETTING
N.I:Non-Interlaced
SWITCH SETTING
FUNCTION
SW7 SW6
OFF OFF 800x600x2,16,256 60Hz *
OFF ON // 56Hz
ON OFF // 72Hz
ON ON // 72Hz
SW5 SW4
OFF OFF 1024x768x2,4,16,256 Interlaced*
OFF ON // 86Hz N.I
ON OFF // 70Hz N.I
ON ON // 72Hz N.I
SW3 OFF 1024KB MEMORY INSTALLED
ON 512KB MEMORY INSTALLED *
SW2 OFF VIDEO MODE MONO
ON VIDEO MODE COLOR *
SW1 OFF ON BOARD VIDEO DISABLE
ON // ENABLE *
WD90C31 BYPASS CAPACITOR
CB46 /.0.1UF
CB31 /.0.1UF
CB45 /.0.1UF
CB38 /.0.1UF
RN8 /.RNA4.7KOHM-P
SW1 /.SWITCH-7POL
R124 /.1KOHM
R134 /.1KOHM
R42 /.4.7KOHM
WD90C31 VGA CONTROLLER
TITLE DeskMaster486S/25N(SD925)
SIZE A4 Revision 3.03
DATE July 25. 92 SHEET 10 OF 13



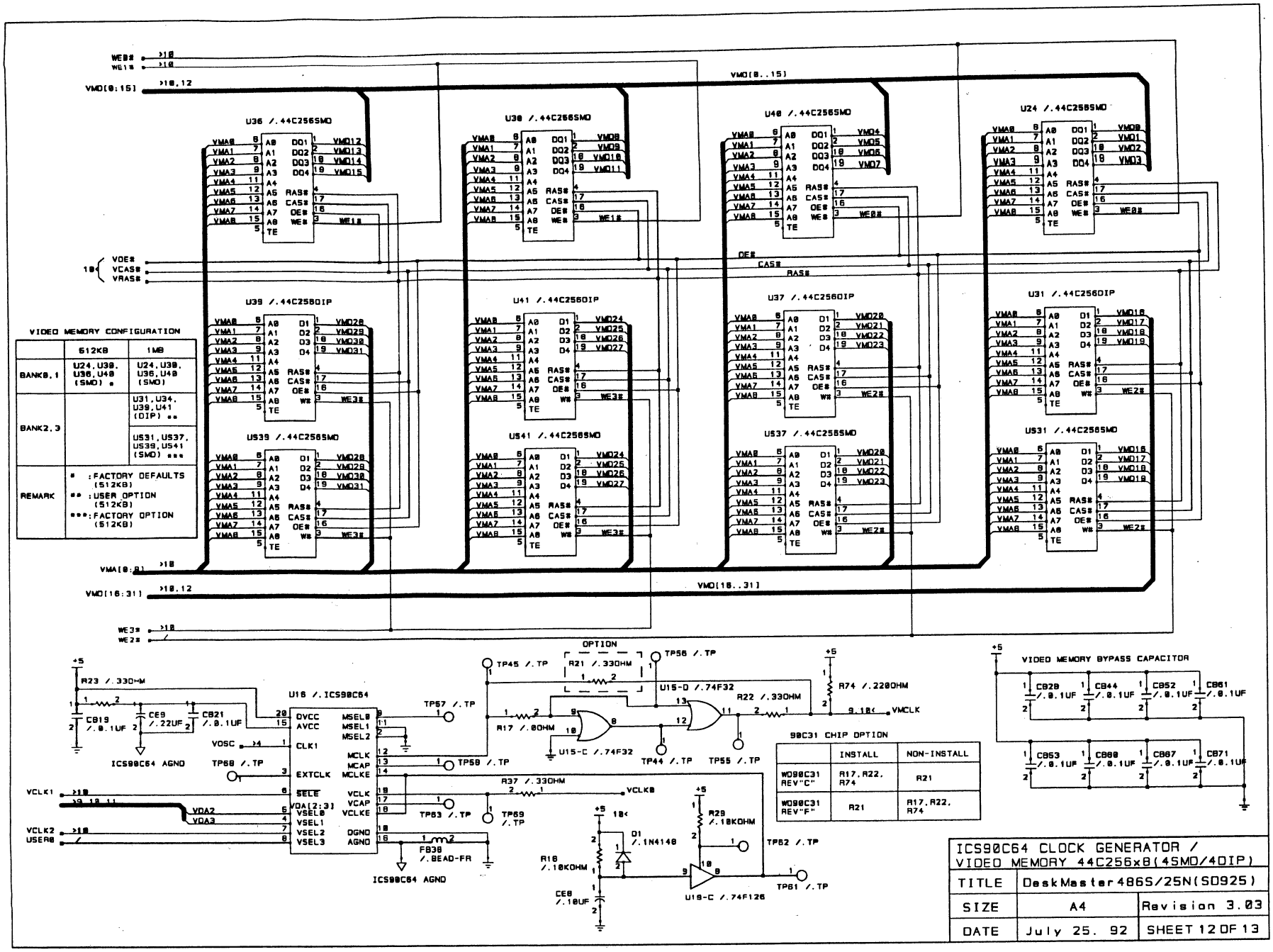
* RAMDAC OPTION
FOR HI-COLOR

OPTION	JP1	JP2	REMARKS
BT478,476 KDA0478,0476	SHORT	2-3	DEFAULTS
SC11483,11487	SHORT	1-2	- HI-COLOR (32Kor64K COLOR)
IMS176	OPEN	1-2	

GND (Digital GND)

AGND (Analog GND)

KDA0478-80 RAMDAC & VIDEO CONN		
TITLE	DeskMaster486S/25N(SD925)	
SIZE	A4	Revision 3.03
DATE	July 25. 92	SHEET 11OF 13

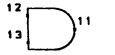

WE0#
WE1#
VMD[0:15]
VMD[0..15]
U36 /.44C256SMD
U38 /.44C256SMD
U40 /.44C256SMD
U24 /.44C256SMD
VOE#
VCAS#
VRAS#
OE#
CAS#
RAS#
U39 /.44C256DIP
U41 /.44C256DIP
U37 /.44C256DIP
U31 /.44C256DIP
US39 /.44C256SMD
US41 /.44C256SMD
US37 /.44C256SMD
US31 /.44C256SMD
VMA[0:8]
VMD[16:31]
VMD[16..31]
WE3#
WE2#
VIDEO MEMORY CONFIGURATION
BANK0,1
BANK2,3
REMARK
U24,U30,U36,U40 (SMD) *
U24,U30,U36,U40 (SMD)
U31,U34,U39,U41 (DIP) **
US31,US37,US39,US41 (SMD) ***
*:FACTORY DEFAULTS (512KB)
**:USER OPTION (512KB)
***:FACTORY OPTION (512KB)
OPTION
R23 /.33OHM
CB19 /.0.1UF
CE9 /.22UF
CB21 /.0.1UF
ICS90C64 AGND
U18 /.ICS90C64
DVCC
AVCC
CLK1
EXTCLK
SELE
VDA[2:3]
VSEL0
VSEL1
VSEL2
VSEL3
MSEL0
MSEL1
MSEL2
MCLK
MCAP
MCLKE
VCLK
VCAP
VCLKE
DGND
AGND
VOSC
TP57 /.TP
TP58 /.TP
TP45 /.TP
R21 /.33OHM
TP56 /.TP
U15-D /.74F32
R22 /.33OHM
R74 /.220OHM
R17 /.80HM
U15-C /.74F32
TP44 /.TP
TP55 /.TP
VMCLK
R37 /.33OHM
VCLK0
TP63 /.TP
TP69 /.TP
VCLK1
VCLK2
USER0
VDA2
VDA3
FB38 /.BEAD-FR
ICS90C64 AGND
D1 /.1N4148
R29 /.18KOHM
R16 /.18KOHM
CE8 /.10UF
U18-C /.74F126
TP62 /.TP
TP61 /.TP
VIDEO MEMORY BYPASS CAPACITOR
CB28 /.0.1UF
CB44 /.0.1UF
CB52 /.0.1UF
CB61 /.0.1UF
CB53 /.0.1UF
CB60 /.0.1UF
CB67 /.0.1UF
CB71 /.0.1UF
90C31 CHIP OPTION
WD90C31 REV"C"
WD90C31 REV"F"
INSTALL
NON-INSTALL
R17,R22,R74
R21
R21
R17,R22,R74
ICS90C64 CLOCK GENERATOR / VIDEO MEMORY 44C256x8(4SMD/4DIP)
TITLE
DeskMaster486S/25N(SD925)
SIZE
A4
Revision 3.03
DATE
July 25. 92
SHEET 12 OF 13

SPARE I.C.

U10-C /.74F08

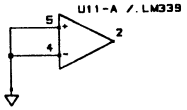
U1-C /.7486

U34-B /.74LS84



U10-D /.74F08

U1-D /.7486



F1 /.V-MARK
VISION MARK

F2 /.V-MARK
VISION MARK

F3 /.V-MARK
VISION MARK

F4 /.V-MARK
VISION MARK

F5 /.V-MARK
VISION MARK

F6 /.V-MARK
VISION MARK

F7 /.V-MARK
VISION MARK

F8 /.V-MARK
VISION MARK

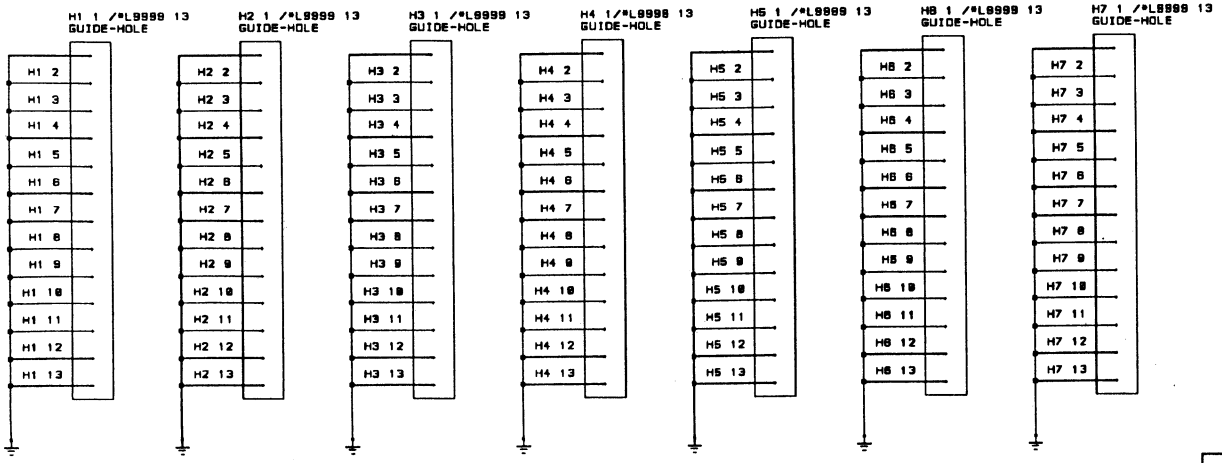
F9 /.V-MARK
VISION MARK

F10 /.V-MARK
VISION MARK

F11 /.V-MARK
VISION MARK

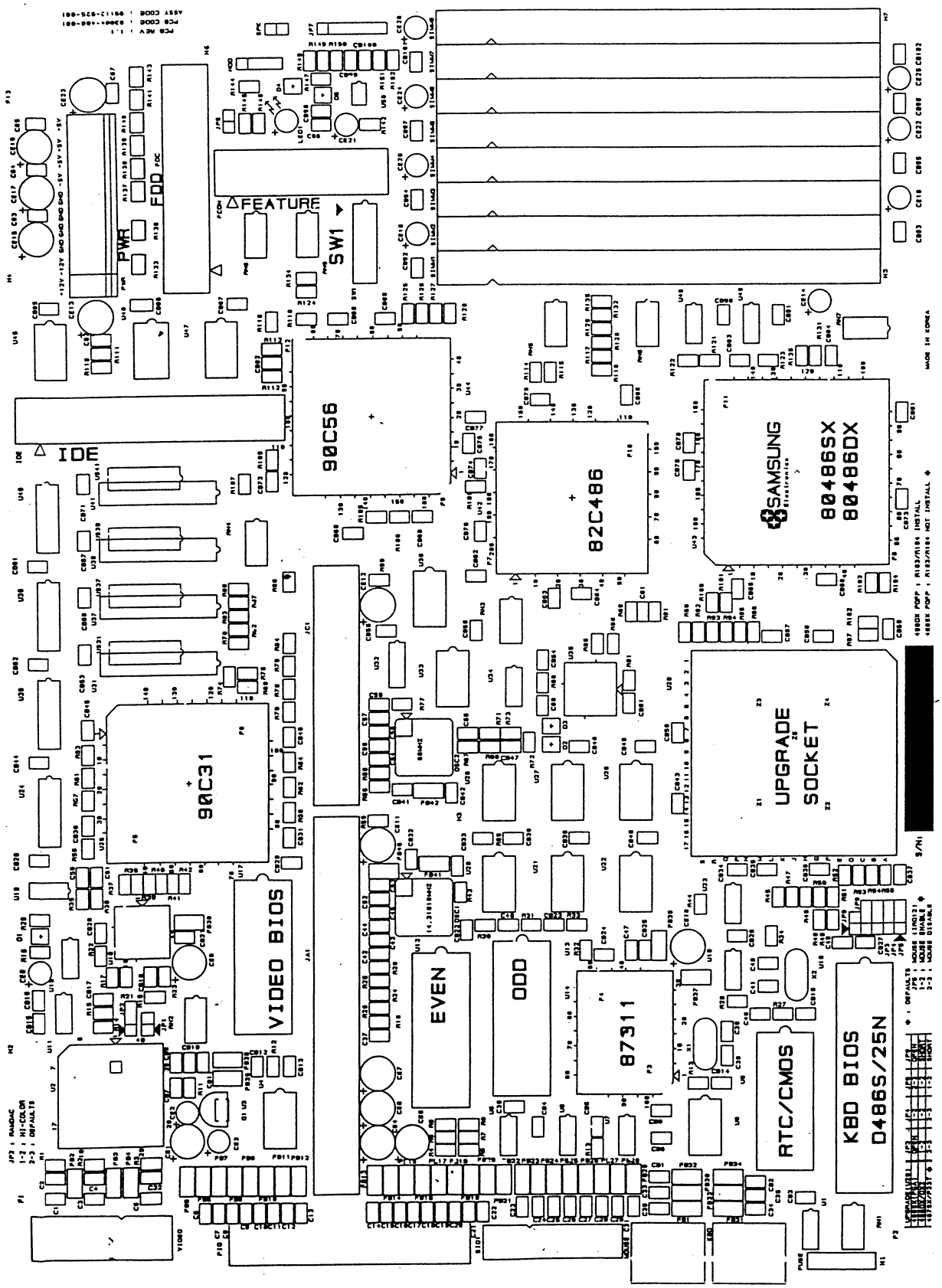
F12 /.V-MARK
VISION MARK

F13 /.V-MARK
VISION MARK

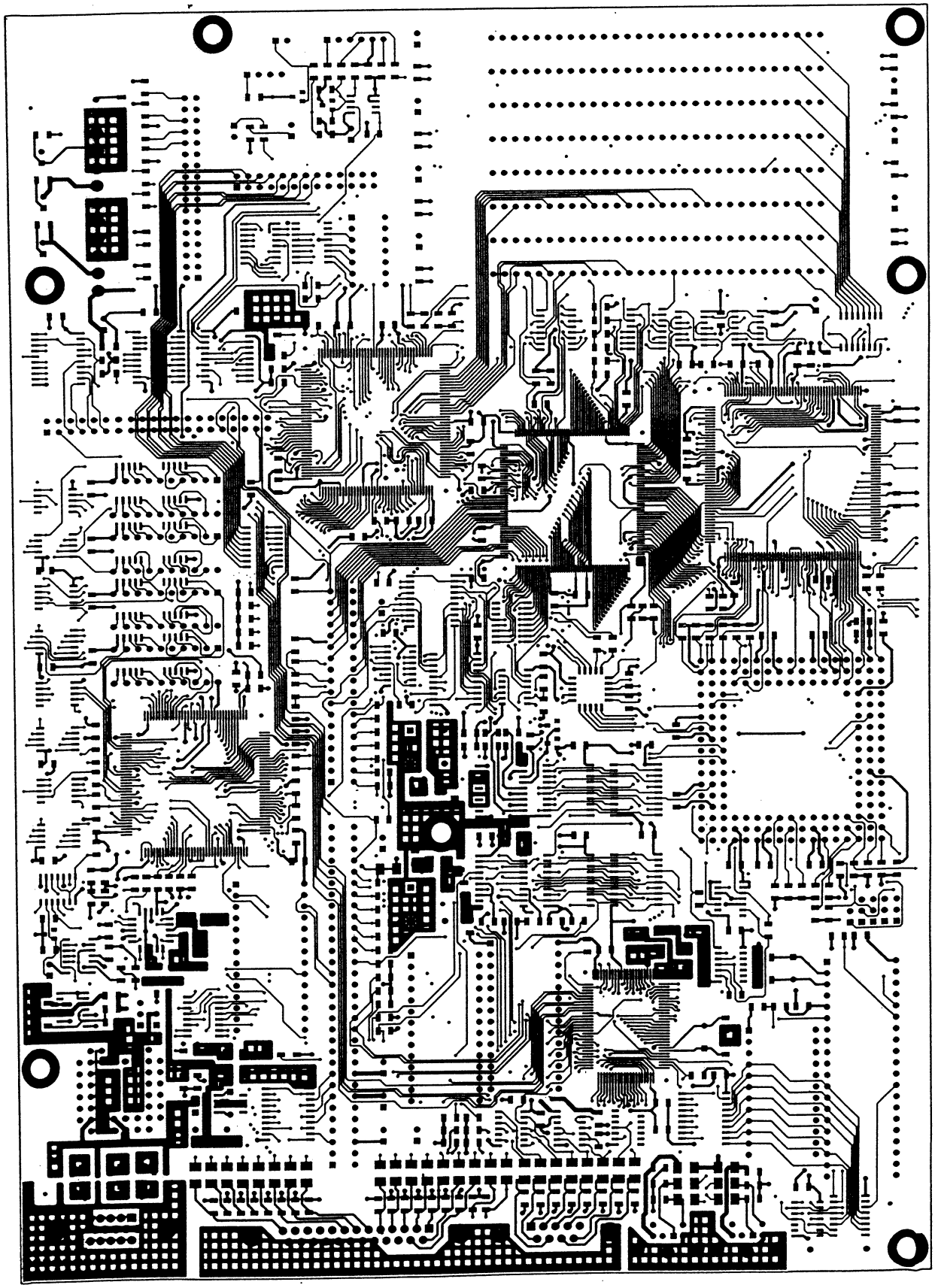


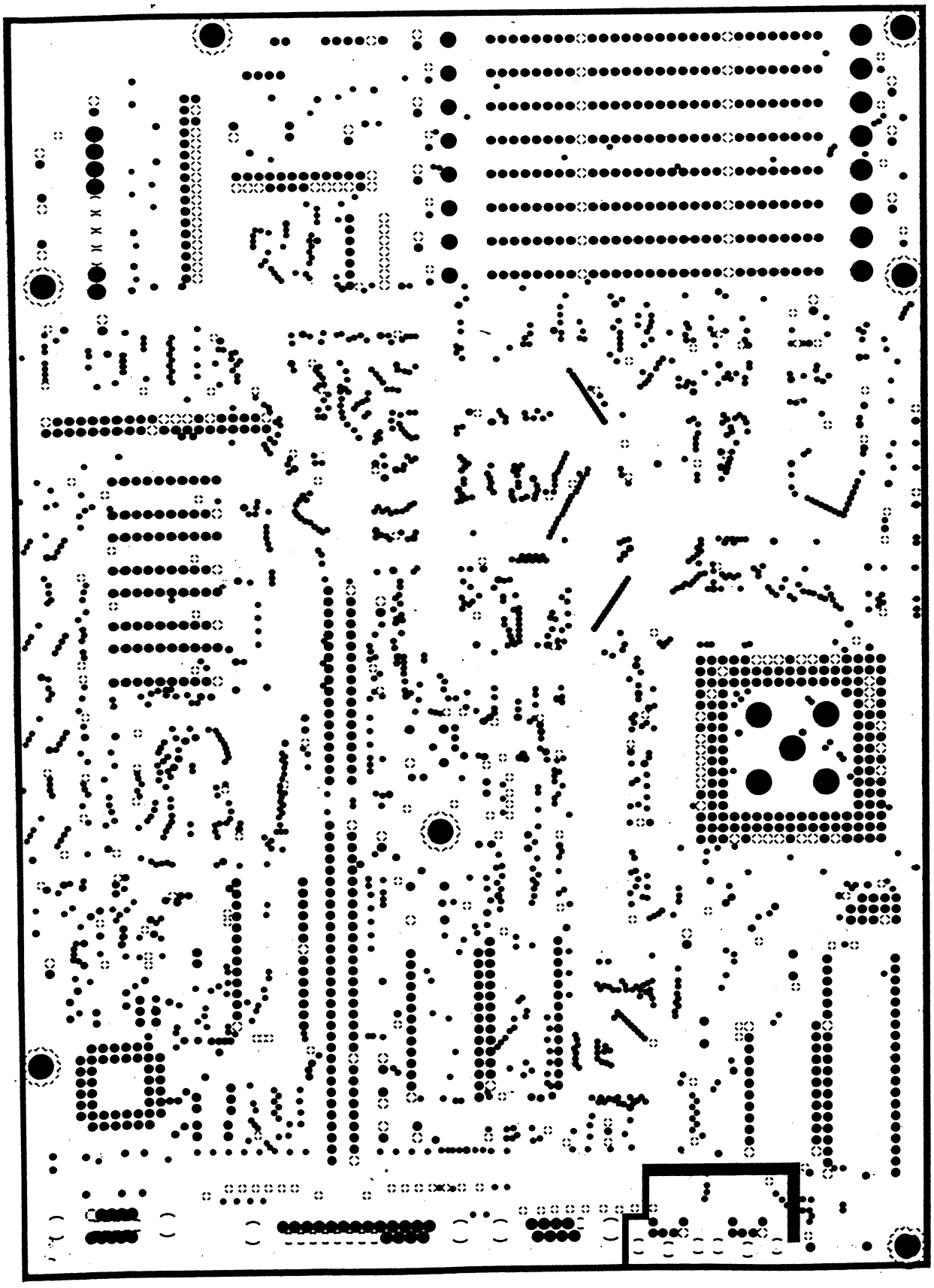
GUIDE HOLE		
TITLE	DeskMaster486S/25N(SD925)	
SIZE	A4	Revision 3.03
DATE	July 25. 92	SHEET 13 OF 13

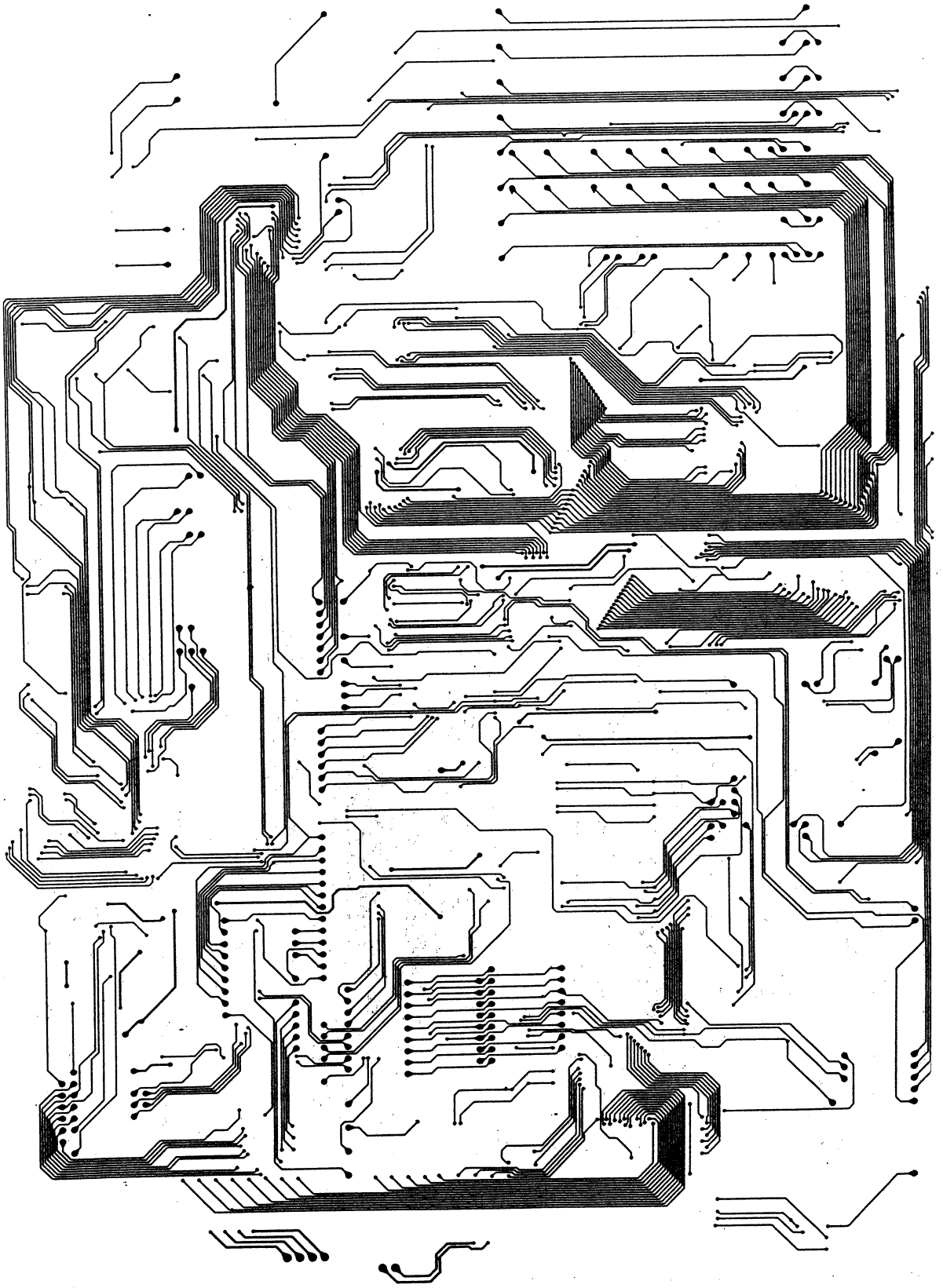
MAIN BOARD COMPONENT LAYOUT

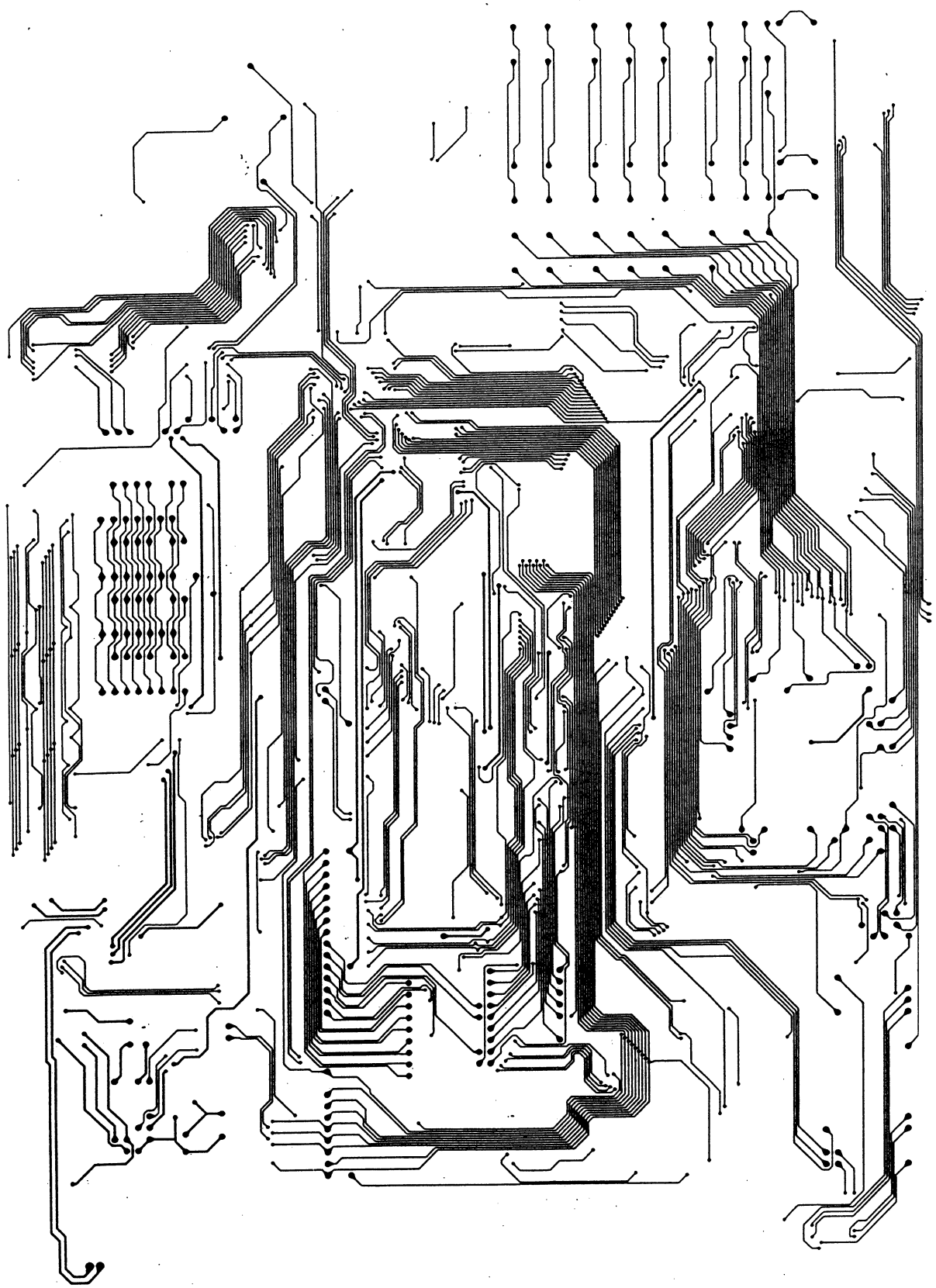


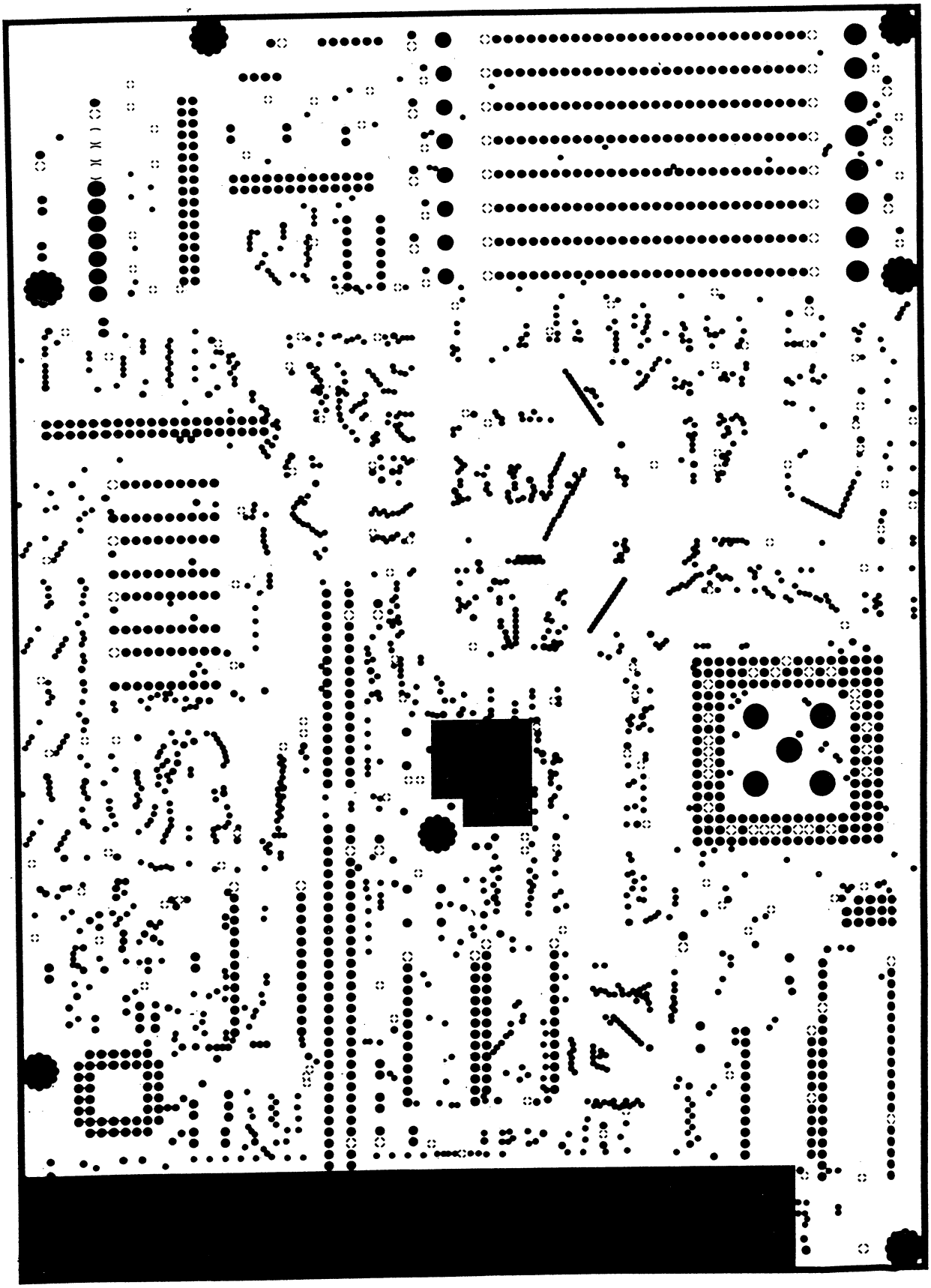
MAIN BOARD PCB PATTERN

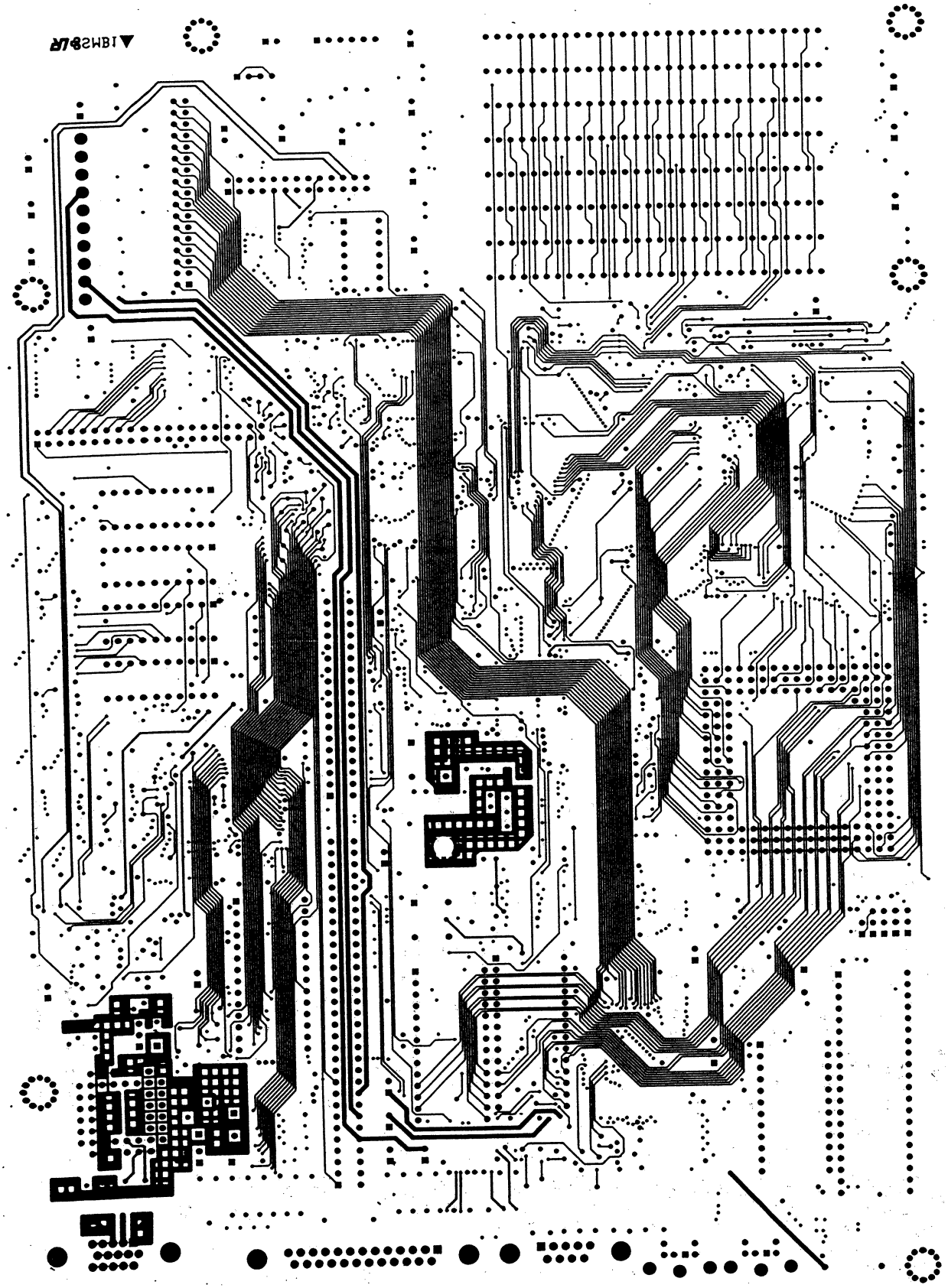




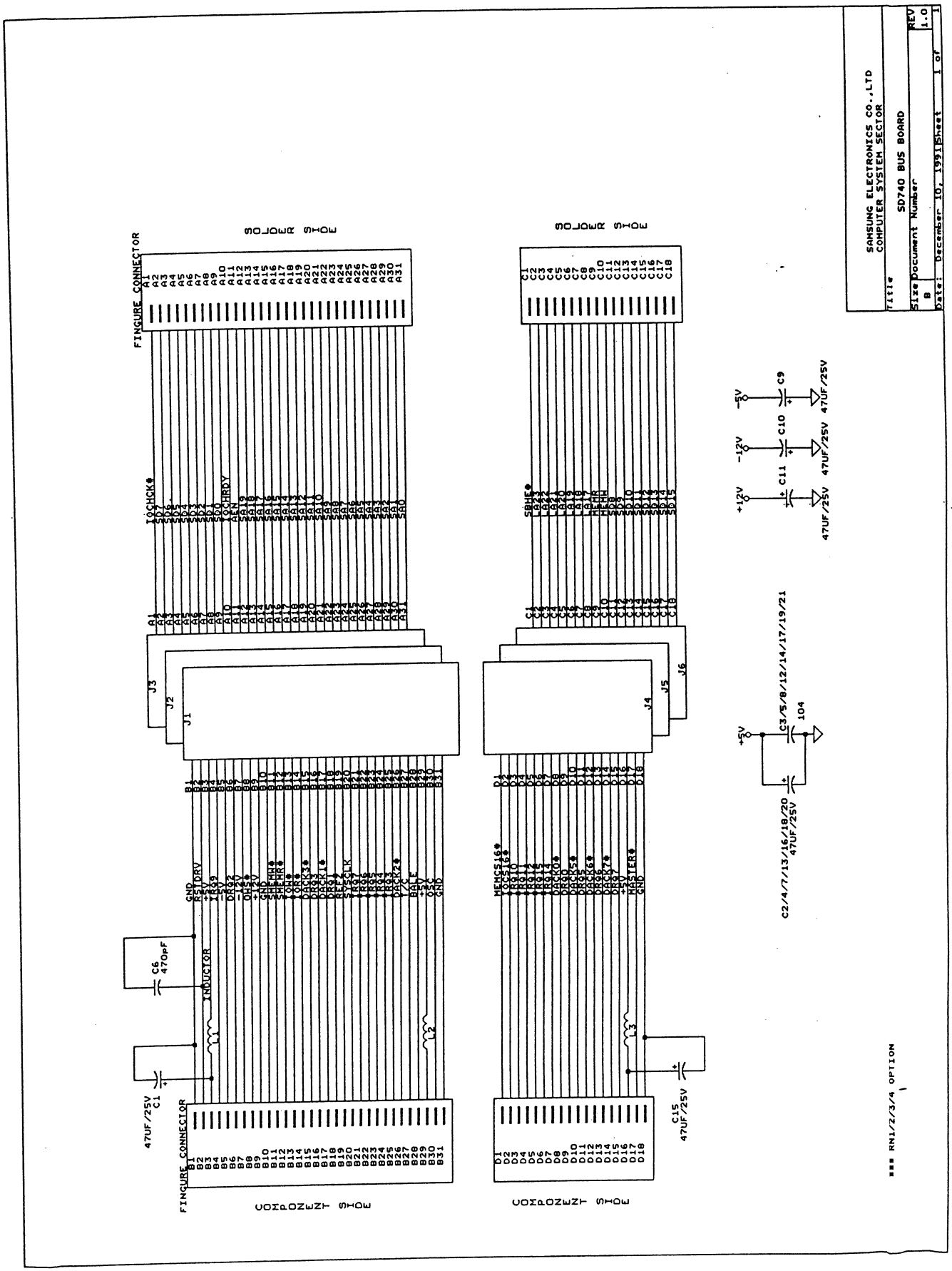




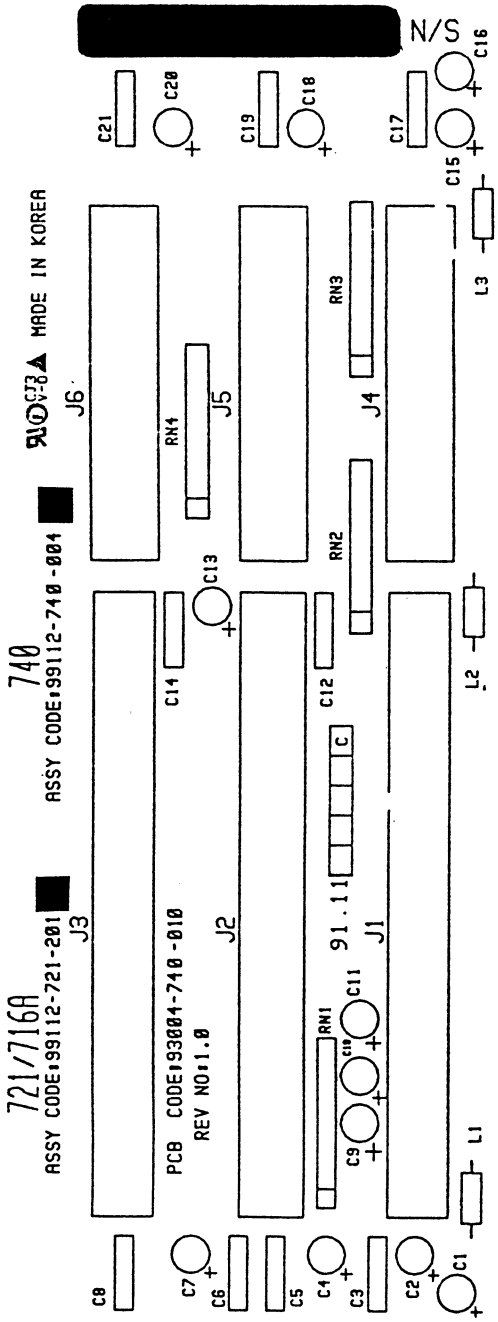



▲ IBM2BLR

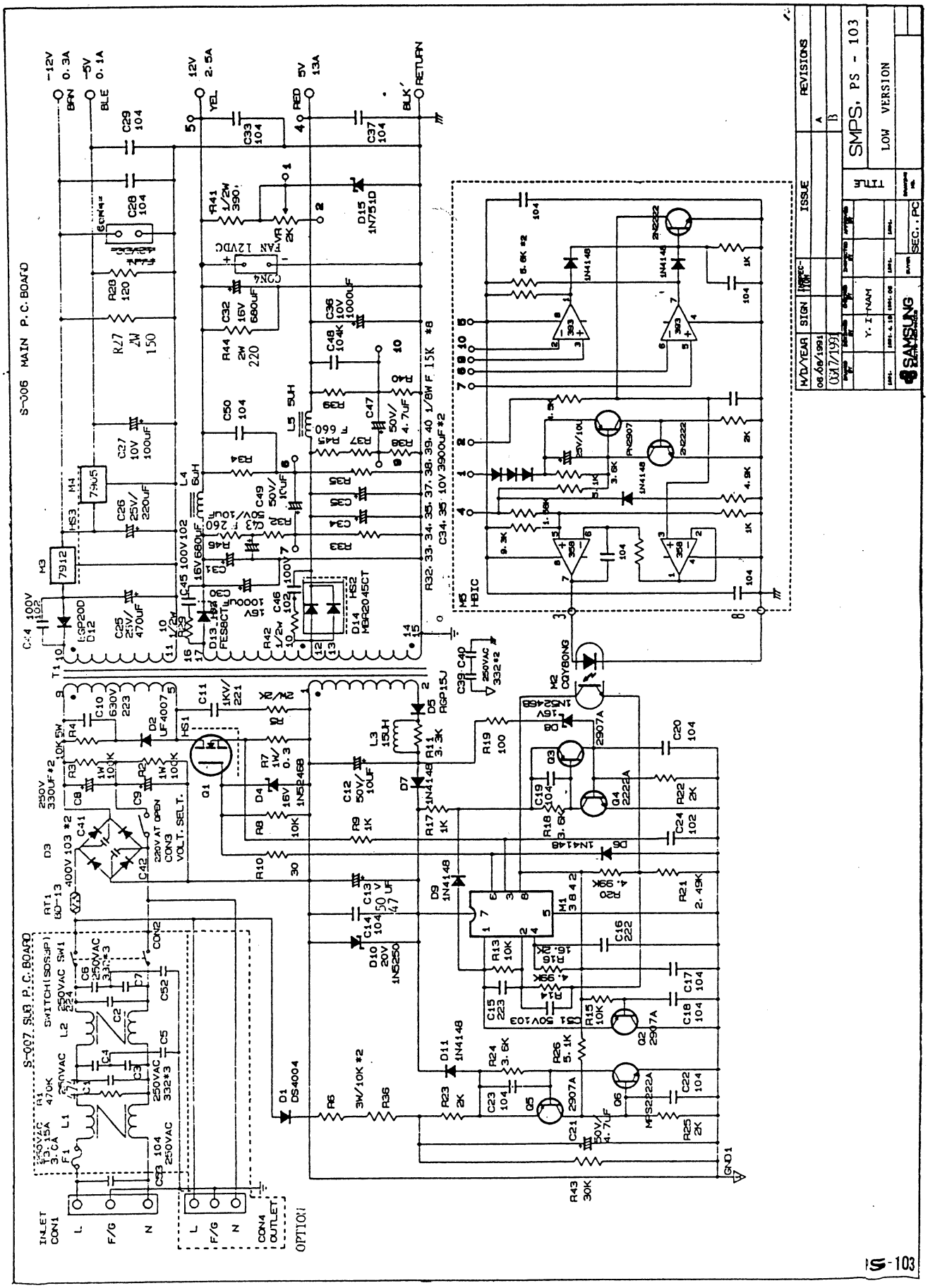
BUS BOARD SCHEMATIC

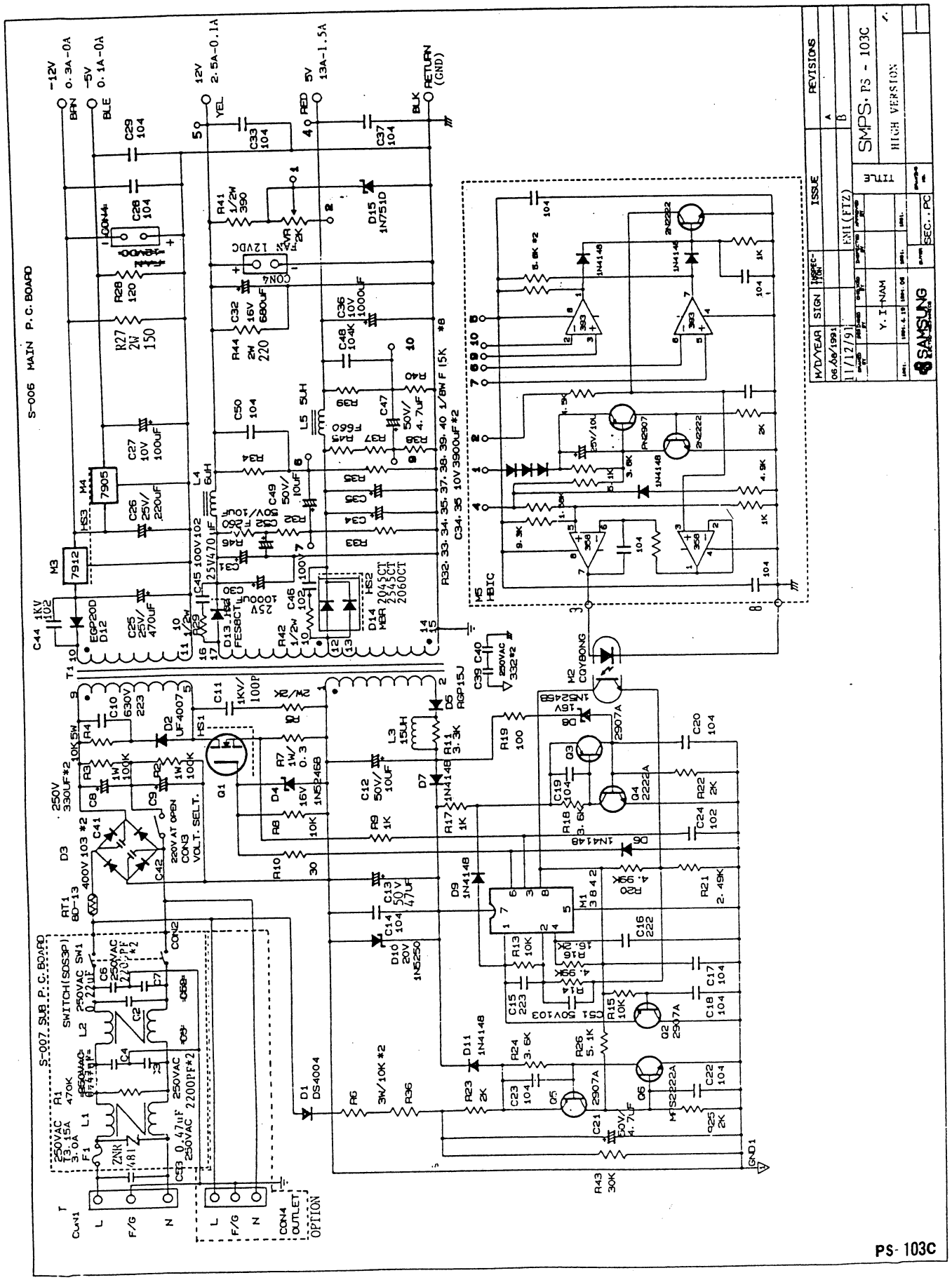


BUS BOARD COMPONENT LAYOUT

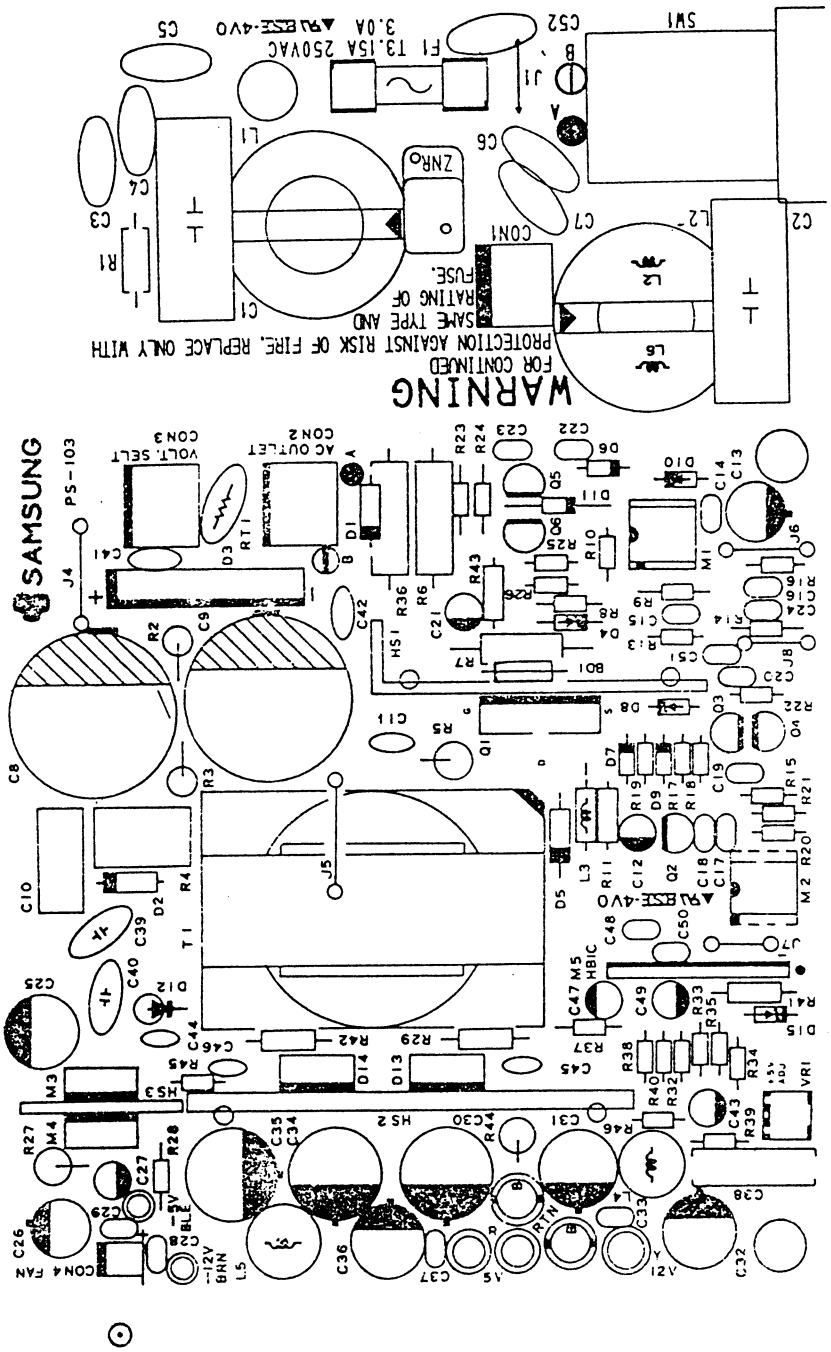


POWER SUPPLY SCHEMATIC




S-006 MAIN P.C.BOARD
S-007 SUB P.C.BOARD
SMPS: PS - 103C
HIGH VERSION
SAMSUNG
REVISIONS
PS-103C

POWER SUPPLY COMPONENT LAYOUT



5. PART LIST

APPENDIX

DIAGNOSTIC PROGRAM
PASSWORD - PASSWORD SETTING

ASSY - MOTHER BOARD

LEVEL	SEC CODE	DESCRIPTION	SPECIFICATION	Q'TY	LOCATION NUMBER
.1	99112-925-001	ASSY-MOTHER B/D	SD925(1M:VIDEO MEM)	1	
..2	96613-920-412	BRACKET	EGI T1.0(CONNECTOR-B)	1	
..2	96674-906-611	SHIELD	PBS2 1/4H TO.2(CONTACT-KBD)	2	
..2	97094-900-310	SCREW-HEXAGON	UNC4-40, SUM24L, FN2	6	
..2	99112-925-100	ASSY-MOTHER B/D(SMD)	SD925, SMD(1MB:VIDEO)	1	
...3	91061-103-560	R-NETWORK SOP	10K, 2%, 0.16W, SOP-16, BUS	1	RN8
...3	91061-472-560	R-NETWORK SOP	4.7K, 2%, 0.32W, SOP-16, BUS	1	RN1
...3	91062-330-160	R-NETWORK SOP	33, 2%, 0.32W, SOP-16, ISO	5	RN2,4-7
...3	91068-203-160	R-NETWORK SOP	20K, 5%, 0.32W, SOP-16, BUS	1	RN3
...3	91070-472-560	R-NETWORK SOP	4.7K, 2%, 0.32W, SOP-16. ISO	1	RN9
...3	91083-000-150	R-CARBON CHIP	0, 5%, 1/8W, CHIP	3	R17, 34, 44
...3	91083-101-150	R-CARBON CHIP	100, 5%, 1/8W, CHIP	1	R11
...3	91083-102-150	R-CARBON CHIP	1K, 5%, 1/8W, CHIP	7	R113, 120, 124, 134 R135, 146, 152
...3	91083-103-150	R-CARBON CHIP	10K, 5%, 1/8W, CHIP	38	R8, 9, 10, 13,16,24 R25, 27, 29, 32, 33 R43, 52, 53, 55, 56 R70, 77, 78, 81-84 R87, 88, 91, 98, 100 R101, 105, 106, 112 R115, 116, 119, 123 R125, 128
...3	91083-103-150	R-CARBON CHIP	150, 5%, 1/8W, CHIP	45	R136, 139-141, 143 R144, 149-151
...3	91083-153-150	R-CARBON CHIP	15K, 5%, 1/8W, CHIP	1	R142
...3	91083-203-250	R-CARBON CHIP	20K, 5%, 1/8W, CHIP	13	R39-41, 45-51, 54 R62, 109
...3	91083-221-150	R-CARBON CHIP	220, 5%, 1/8W, CHIP	3	R74, 102, 131
...3	91083-330-150	R-CARBON CHIP	33, 5%, 1/8W, CHIP	35	R22, 23, 30, 31, 35 R36-38, 57-61, 63 R64, 67-69, 71-73 R75, 76, 79, 80, 85 R86, 89, 108, 117 R126, 127, 129, 132 R148
...3	91083-331-150	R-CARBON CHIP	330, 5%, 1/8W, CHIP	10	R12, 14, 19, 20, 28 R65, 66, 97, 99, 130
...3	91083-471-150	R-CARBON CHIP	470, 5%, 1/8W, CHIP	2	R114, 118
...3	91083-472-150	R-CARBON CHIP	4.7K,5%, 1/8W, CHIP	18	R4-7, 15, 18, 42, 90 R92-96, 107, 111 R121, 122, 133
...3	91083-561-150	R-CARBON CHIP	560, 5%, 1/8W, CHIP	1	R145
...3	91083-564-150	R-CARBON CHIP	560K, 5%, 1/8W, CHIP	1	R147
...3	91083-750-110	R-CARBON CHIP	75, 1%, 1/8W, CHIP	3	R1-3
...3	91301-103-357	C-CERAMIC CHIP	10nF, 1%, 1/8W CHIP	1	C66
...3	91301-104-310	C-CERAMIC CHIP	0.1nF,10%, 50V, X7R	94	CB1-91, 96, 99, 100
...3	91301-150-757	C-CERAMIC CHIP	15nF, 5%, 50V, X7R	8	C1-5, 31, 41,48
...3	91301-200-050	C-CERAMIC CHIP	20pF, 5%, 50V, COG	2	C38, 39
...3	91301-221-757	C-CERAMIC CHIP	220pF, 5%, 50V COG	21	C23-29, 31, 37, 40 C42-45, 49, 52

LEVEL	SEC CODE	DESCRIPTION	SPECIFICATION	Q'TY	LOCATION NUMBER
					C 54-57, 59
...3	91301-222-356	C-CERAMIC CHIP	2.2nF, 10%, 50V, X7R	17	C6- 22
...3	91301-270-757	C-CERAMIC CHIP	27pF, 5%, 50V, COG	1	C58
...3	91301-330-757	C-CERAMIC CHIP	33pF, 5%, 50V, COG	2	C46, 53
...3	91301-334-057	C-CERAMIC CHIP	0.33uF, 5%, 50V, COG	8	CB92-95, 97, 98 CB101, 102
...3	91301-470-757	C-CERAMIC CHIP	47pF, 5%, 50V, COG	12	C30, 33-35, 50, 51 C61-65, 67
...3	91301-471-757	C-CERAMIC CHIP	470pF, 5%, 50V, COG	1	C60
...3	91301-473-357	C-CERAMIC CHIP	47nF, 10%, 50V, X7R	1	C47
...3	92109-510-060	IC-TTL	7406, SOP-14	1	U1
...3	92109-520-041	IC-TTL	74LSO4, SOP-14	1	U34
...3	92109-521-381	IC-TTL	74LS138 SOP-16	1	U32
...3	92109-522-449	IC-TTL	74LS244, SOP-W20	6	U4, 20 22, 28, 38 U47
...3	92109-522-450	IC-TTL	74LS245, SOP-W20	3	U8, 45, 46
...3	92109-523-731	IC-TTL	74LS373, SOP-W20	3	U21, 27, 33
...3	92109-540-080	IC-TTL	74F08, SOP-14	1	U18
...3	92109-540-320	IC-TTL	74F32, SOP-14	1	U15
...3	92109-541-260	IC-TTL	74F126, SOP-14	1	U19
...3	92109-630-001	IC-MOS	74ACT00 SOP-14	2	U48, 49
...3	92109-672-400	IC-MOS	P74PCT240ASC	1	U26
...3	92109-751-883	IC-INTERFACE	75118, SOP-14	1	U6
...3	92111-751-893	IC-INTERFACE	75189, SOP-14	2	U5, 7
...3	92113-425-647	IC-DRAM	44C256C, 256K*4	8	U24, 30, 36, 40 U31, 37,39, 41
...3	93004-486-001	PCB	MOTHER B/D, 6L, 205×286	1	
...3	92113-616-090	IC-PAL	16L8A, 16*8	1	U35
...3	92115-100-250	IC-CPU	80486SX125, PQFP	1	U43
...3	92115-535-870	IC-CUSTOM	NS8731L, PQFP	1	U14
...3	92115-559-820	IC-CUSTOM	VL82C486, PQFP	1	U42
...3	92115-561-900	IC-CUSTOM	WD90C31, PQFP	1	U25
...3	92115-561-901	IC-CUSTOM	WD90C56, PQFP	1	U44
...3	92119-633-700	IC-LINEAR	LM337ML, SOP-8	1	U3
...3	92115-590-640	IC-CUSTOM	ICS90C64V, PLCC-20	1	U16
...3	92119-201-051	IC-LINEAR	TL7705A, SOP-8	1	U50
...3	92119-301-339	IC-LINEAR	LM339, XOP-14	1	U11
...3	92169-341-483	DIODE-SWITCHING	FDSO4148-S	5	D1-5
...3	94049-903-941	CORE-FERRITE	2743019447(F/R)	12	FB2-4, 32, 34-41
...3	94049-903-960	CORE-FERRITE	HF50ACB322513-T(TDK)	29	FB1, 5, 6-31, 33
..2	99112-925-200	ASSY-MOTHER B/D(DIP)	SD925, DIP(1M;VIDEO)	1	
...3	91602-022-260	C-ELECTRONIC	22uF, 20%, 25V	13	CE4-7, 9-13, 15 CE17, 19, 23
...3	91603-904-472	C-ELECTRONIC	47uF, 20%, 25V	1	CE1
...3	91608-402-210	C-ELECTRONIC	1uF, 20%, 50V	1	CE2
...3	91609-010-660	C-ELECTRONIC	10uF, 20%, 16V	4	CE3, 8, 14, 21
...3	92109-400-050	IC-CUSTOM	DS1287, DIP-24	1	U9
...3	92113-203-280	IC-EPROM	27C256, 32K*8	3	U12, 13, 17
...3	92115-180-420	IC-CPU	P8042-1.20, DIP-40	1	U10
...3	92115-537-470	IC-CUSTOM	KDAQ476PL, PLCC44	1	U2
...3	92309-110-010	LED	SLR-34MC(ROHM)	1	LED1
...3	93310-021-260	CONN-HEADER	BM4W-THD, 26P, 2ROW-STR	1	FCON
...3	93340-102-080	CONN-HEADER	BM4W-THD, 2P, 1ROW-STR	1	SPK
...3	93340-106-050	CONN-HEADER	BM4W-THD, 6P, 1ROW-STR	1	JP7
...3	93340-110-040	CONN-HEADER	BM1W-THD, 10P, 1ROW-STR	1	PWR

LEVEL	SEC CODE	DESCRIPTION	SPECIFICATION	Q'TY	LOCATION NUMBER
...3	93340-502-120	CONN-SHUNT	JUMPER, 2P	6	
...3	93340-798-050	CONN-C/E	BMR-THD, 98P, 2ROW-STR	1	JA1+JC1
...3	93341-002-100	CONN-HEADER	BMNW-THD, 2P, 1ROW-STR	3	JP1, JP6, JP9
...3	93341-003-080	CONN-HEADER	BMNW-THD, 3P, 1ROW-STR	1	JP2
...3	93345-013-090	CONN-DSUB	BMP-THD, 9P, 2ROW-R/A	1	SIO1
...3	93345-017-152	CONN-DSUB	BMP-THD, 15P, 3ROW-R/A	1	VIDEO
...3	93345-017-250	CONN-DSUB	BMP-THD, 25P, 2ROW-R/A	1	PIO
...3	93345-021-060	CONN-HEADER	BMP-THD, 6P, 2ROW-R/A	2	(JP8, 3), (JP4, 5)
...3	93345-023-041	CONN-HEADER	BMP-THD, 4P, 1ROW-R/A	1	HDD
...3	93345-025-341	CONN-HEADER	BMP-THD, 34P, 2ROW-R/A	1	FDC
...3	93345-025-401	CONN-HEADER	BMP-THD, 40P, 2ROW-R/A		IDE1
...3	93345-051-002	CONN-JACK	BMP-THD, 6P, R/A	2	KBD, MOUSE
...3	93345-337-203	CONN-SOCKET	BMP-THD, 60P, 2ROW-R/A	4	SIMM1-8
...3	93354-124-010	SOCKET-IC	DIP-THD, 24P-W, 2ROW-STR	1	U9
...3	93354-128-010	SOCKET-IC	DIP-THD, 28P-W, 2ROW-STR	3	U12, 13, 17
...3	93354-140-010	SOCKET-IC	DIP-THD, 40P-W, 2ROW-STR	1	U10
...3	93953-169-010	SOCKET-IC	PGA-THD, 169P, 3ROW-STR	1	U29
...3	93510-314-070	SWITCH-DIP	206-7LPST(WOOJIN), 7PIN	1	SW1
...3	93554-204-401	SOCKET-IC	PLCC-THD, 44P, 2ROW-STR	1	U2
...3	94538-024-005	CRYSTAL	ATS-49/U, 24MHZ, 24MHZ	1	X1
...3	94539-014-319	OSC-CLOCK	14.31818M, 100PPM, HDIP-4	1	OSC1
...3	94539-050-003	OSC-CLOCK	50 MHZ, 100PPM, HDIP-4	1	OSC2
...3	94539-915-600	CRYSTAL	12 MHZ, 50PPM, ATS-49/U	1	X2
...3	98114-004-010	LABEL-BARCODE	PCB, 40*6MM, ALL MODEL	1	
...3	98114-740-005	LABEL-IC	VGA, BIOS, W/D	1	U17
...3	98114-000-051	LABEL-IC	BIOS, EVEN, A486, V/.01	1	
...3	98114-000-052	LABEL-IC	BIOS, ODD, A486, V/.01	1	
...3	94709-902-710	FUSE	251004(LITEL) GPICO	1	FUSE
.1	99112-925-002	ASSY-MOTHER B/D	SD925(512KB:VIDEO MEM)		
..2	99112-925-101	ASSY-MOTHER B/D	SD925, SMD (512KB:VIDEO)		
..2	99112-925-201	ASSY-MOTHER B/D	SD925, DIP (512KB:VIDEO)		

ASSY - BUS BOARD

LEVEL	SEC CODE	DESCRIPTION	SPECIFICATION	Q'TY	LOCATION NUMBER
.1	99112-740-004	ASSY-BUS B/D	D386S/25	1	
..2	91302-104-150	C-CERAMIC MONO	0.1uF,+80 ,50V, Z5U	8	C3, 5, 8, 12, 14, 17 C19, 21
..2	91302-471-356	C-CERAMIC MONO	470p , 10%, 50V, X7R		C6
..2	91603-904-472	C-ELECTRONIC	47uF, 20%, 25V,	12	CE1, 2, 4, 7, 9-11 CE13, 15, 16, 18, 20
..2	93004-740-010	PWB	BUS-B/D 18, X75MM2LA, (SD740)	1	
..2	93340-798-050	CONN-C/E	BMR-THD, 98P, 2ROW-STR 2	3	J1-3
..2	94049-901-611	CORE-FERRITE	L5RH3 (NAMYANG) N4*9*1	3	L1-3

MEMORY EXPANSION

LEVEL	SEC CODE	DESCRIPTION	SPECIFICATION	Q'TY	LOCATION NUMBER
.1	99112-923-500	ASSY-MEM MDL(NO PARI	4MB(NO PARI, 80nS, 1MB	1	
..2	92113-861-082	IC-MEM MODULE	581000B, 1M*8, 80N, SIMM-	4	SIMM1-4
.1	99112-923-600	ASSY-MEM MDL(NO PARI	8MB(NO PARI, 80nS, 1MB	1	
..2	92113-861-082	IC-MEM MODULE	581000B, 1M*8,	8	SIMM1-8

ASSY - HARNESS

LEVEL	SEC CODE	DESCRIPTION	SPECIFICATION	Q'TY	LOCATION NUMBER
.1	99114-462-003	ASSY-HARNESS SPEAKER	SPC4620P	1	
..2	93053-407-510	SPEAKER HARNESS-ASSY	SPC-6512	1	
..2	94209-901-610	SPEAKER	42TH01D, 32OHM, 0.1W	1	
..2	96674-903-210	SPRING-SPEAKER	SUS DIA T1.2	1	
.1	99114-740-003	ASSY-HARNESS	D386S/25	1	
..2	93056-620-003	HARNESS-ASSY	IDE CBL, 130MM, SD620	1	
..2	93056-620-004	HARNESS-ASSY	FDD CBL, 34P, 520MM, SD	1	
..2	93056-740-001	HARNESS-ASSY	LED, RESET, KEY-LOCK, S	1	
..2	96604-703-110	HOLDER-WIRE	K106G, RICHICO	1	
..2	96604-703-210	HOLDER-WIRE	K103G, RICHICO	1	

ASSY - FDD

LEVEL	SEC CODE	DESCRIPTION	SPECIFICATION	Q'TY	LOCATION NUMBER
.1	99121-350-001	ASSY-FDD	3.5"1.44M MITSUMI	1	
..2	94979-914-310	FDD 3.5" 1.44M	D359T2 (MITSUMI)	1	
..2	98114-001-020	LABEL-BARCODE	UNIT, 55*12, ALL MODEL	1	
.1	99121-525-001	ASSY-FDD	5.25"1.2M MITSUMI	1	
..2	94979-914-010	FDD 96TPI	D509V (MITSUMI)	1	
..2	98114-001-020	LABEL-BARCODE	UNIT, 55*12, ALL MODEL	1	
.1	99121-535-002	ASSY-FDD	A+B 5.25"MI+3.5"MI	1	
..2	94979-914-010	FDD 96TPI	D509V (MITSUMI)	1	
..2	94979-914-310	FDD 3.5" 1.44M	D359T2 (MITSUMI)	1	
..2	98114-001-020	LABEL-BARCODE	UNIT, 55*12, ALL MODEL	2	

ASSY - HDD

LEVEL	SEC CODE	DESCRIPTION	SPECIFICATION	Q'TY	LOCATION NUMBER
.1	99122-716-102	ASSY-HDD	W/O HDD	1	
..2	97094-904-510	SCREW-PH	6-32*0.165 INCH FE F	4	

HDD LIST

LEVEL	SEC CODE	DESCRIPTION	SPECIFICATION	Q'TY	LOCATION NUMBER
	94971-935-040	HDD	CAVIAR 140(W/D), 40MB, 3.5"		
	94971-935-041	HDD	ST351A/X(3.5",40MB), 40MB, 3.5"		
	94971-935-050	HDD	LPS52AT, 52MB, 3.5"		
	94971-935-060	HDD	SHD-3061A(3.5",60MB) 60MB, 3.5"		
	94971-935-080	HDD	CAVIAR 280(W/D), 80MB, 3.5		
	94971-935-081	HDD	CP30084E, 80MB, 3.5"		
	94971-935-100	HDD	SHD-3101A(3.5",105M),105MB, 3.5"		
	94971-935-120	HDD	CP-3010H, 120MB, 3.5"		
	94971-935-121	HDD	WDAC2120-00M, 120MB, 3.5"		
	94971-935-122	HDD	SHD-3062A(3.5", 120M 120MB, 3.5"		
	94971-935-213	HDD	7213A(MAXTOR), 213MB, 3.5"		
	94971-935-100	HDD	CP3104(CONNER), 100MB, 3.5"		
	94971-935-403	HDD	CP3044(CONNER), 40MB, 3.5"		
	94971-935-800	HDD	CP3184(CONNER), 80MB, 3.5"		

KEY - BOARD

LEVEL	SEC CODE	DESCRIPTION	SPECIFICATION	Q'TY	LOCATION NUMBER
.1	99113-740-001	ASSY-KBD	SEM-K20S-1 US 101	1	
..2	93550-274-030	KBD-ASSY	SEM-K20S-US (SEM)	1	
..2	98712-906-010	CUSHION-KBD	EPS C=0.02	1	
.1	99113-740-002	ASSY-KBD	SEM-K20S-1 UK 102	1	
..2	93550-274-050	KBD-ASSY	SEM-K20S-UK (SEM)	1	
..2	98712-906-010	CUSHION-KBD	EPS C=0.02	1	
.1	99113-740-003	ASSY-KBD	SEM-K20S-1 FR 102	1	
..2	93550-274-070	KBD-ASSY	SEM-K20S-FR (SEM)	1	
..2	98712-906-010	CUSHION-KBD	EPS C=0.02	1	
.1	99113-740-004	ASSY-KBD	SEM-K20S-1 SP 102	1	
..2	93550-274-130	KBD-ASSY	SEM-K20S-SP (SEM)	1	
..2	98712-906-010	CUSHION-KBD	EPS C=0.02	1	
.1	99113-740-005	ASSY-KBD	SEM-K20S-1 ARBA 102	1	
..2	93550-274-390	KBD-ASSY	SEM-K20S-ARAB (SEM)	1	
..2	98712-906-010	CUSHION-KBD	EPS C=0.02	1	
.1	99113-740-006	ASSY-KBD	SEM-K20S-1 US(N_LOG,	1	
..2	93550-274-031	KBD-ASSY	SEM-K20S-US (SEM)	1	
..2	98712-906-010	CUSHION-KBD	EPS C=0.02	1	
.1	99113-740-007	ASSY-KBD	SEM-K20S-1 R_DG 101	1	
..2	93550-274-032	KBD-ASSY	SEM-K20S R.DG	1	
..2	98712-906-010	CUSHION-KBD	EPS C=0.02	1	

PACKING

LEVEL	SEC CODE	DESCRIPTION	SPECIFICATION	Q'TY	LOCATION NUMBER
.1	99115-925-001	ASSY-PACKING	D486S/25N(SISA)	1	
..2	90899-100-013	DRY-GEL	DESICCANT M-2 20GR	1	
..2	90899-900-110	PE FILM	LDPE 0.05TX2400	1	
..2	98114-372-007	LABEL-BARCODE	MASTER OPTION-BOX	2	
..2	98612-914-921	PACKING-CASE	CB-SW2EGOLMINILA260R	1	
..2	98612-917-550	PACKING CASE	D486S/25N ,SW4-A MAN	1	
..2	98704-902-050	PAD-PACKING	SW-2 YEL(SPC-6100)	1	
..2	98704-904-920	PAD	PAD-MANUAL, E.P.S	3	
..2	98711-908-911	CUSHION	FOAM-LEX	2	
..2	98794-202-110	AIR-BAG CONTAINER	HDPE+PAPER		
.1	99115-925-002	ASSY-PACKING	DPC4425(DT1)	1	
..2	90899-100-013	DRY-GEL	DESICCANT M-2 20GR	1	
..2	90899-900-110	PE FILM	LDPE 0.05TX2400	1	
..2	98114-372-007	LABEL-BARCODE	MASTER OPTION-BOX,	2	
..2	98602-900-620	PACKING CASE	SW-4 U M/	1	
..2	98612-914-921	PACKING-CASE	CB-SW2EGOLMINILA260R	1	
..2	98704-902-050	PAD-PACKING	SW-2 YEL(SPC-6100)	1	
..2	98704-904-920	PAD	PAD-MANUAL, E.P.S	2	
..2	98711-908-911	CUSHION	FOAM-LEX	2	
..2	98794-202-110	AIR-BAG CONTAINER	HDPE+PAPER	1	
.1	99115-925-003	ASSY-PACKING	D486S/25N(SISE)	1	
..2	90899-100-013	DRY-GEL	DESICCANT M-2 20GR	1	
..2	90899-900-110	PE FILM	LDPE 0.05TX2400	1	
..2	98114-372-007	LABEL-BARCODE	MASTER OPTION-BOX, 11	2	
..2	98612-914-921	PACKING-CASE	CB-SW2EGOLMINILA260R	1	
..2	98612-917-560	PACKING CASE	SISE TYPE ,SW4-A MAN	1	
..2	98654-905-910	PE BAG	HDPE 150*	1	
..2	98711-908-911	CUSHION	FOAM-LEX	2	
..2	98794-202-110	AIR-BAG CONTAINER	HDPE+PAPER	1	
.1	99115-925-004	ASSY-PACKING	D486S/25N(SISE),COMMON	1	
..2	90899-100-013	DRY-GEL	DESICCANT M-2 20GR	1	
..2	90899-900-110	PE FILM	LDPE 0.05TX2400	1	
..2	98114-372-007	LABEL-BARCODE	MASTER OPTION-BOX, 11	4	
..2	98612-914-921	PACKING-CASE	CB-SW2EGOLMINILA260R	1	
..2	98612-917-516	PACKING CASE	SISA TYPE ,SW-4 WHT	1	
..2	98704-902-050	PAD-PACKING	SW-2 YEL(SPC-6100)	1	
..2	98704-904-920	PAD	PAD-MANUAL, E.P.S	3	
..2	98711-908-911	CUSHION	FOAM-LEX	2	
..2	98794-202-110	AIR-BAG CONTAINER	HDPE+PAPER	1	
.1	99115-925-005	ASSY-PACKING	D486S/25N(SISA),COMMON	1	
..2	90899-100-013	DRY-GEL	DESICCANT M-2 20GR	1	
..2	90899-900-110	PE FILM	LDPE 0.05TX2400	1	
..2	98114-372-007	LABEL-BARCODE	MASTER OPTION-BOX, 11	4	
..2	98612-914-921	PACKING-CASE	CB-SW2EGOLMINILA260R	1	
..2	98612-917-590	PACKING CASE	SISE TYPE ,SW-4 WHT	1	
..2	98704-902-050	PAD-PACKING	SW-2 YEL(SPC-6100)	1	
..2	98704-904-920	PAD	PAD-MANUAL, E.P.S	3	
..2	98711-908-911	CUSHION	FOAM-LEX	2	
..2	98794-202-110	AIR-BAG CONTAINER	HDPE+PAPER	1	

ASSY - BOTTOM

LEVEL	SEC CODE	DESCRIPTION	SPECIFICATION	Q'TY	LOCATION NUMBER
.1	99101-925-001	ASSY-BOTTOM	D486S/25N	1	
..2	97088-130-062	SCREW-BH	+M3*6 FE FZW	8	
..2	97458-230-062	SCREW-TAPTITE BH	+S-3X6 FE FZW	2	
..2	98469-900-010	FOOT RUBBER	POLYURETAN 3M-SJ5508	1	
..2	98901-902-110	CHASSIS-ASSY	EGI	1	

ASSY -BEZEL

LEVEL	SEC CODE	DESCRIPTION	SPECIFICATION	Q'TY	LOCATION NUMBER
.1	99103-925-001	ASSY-BEZEL	D486S/25N	1	
..2	96674-902-010	SPRING-POWER	SUS-WPA PI0.5, ST-35	2	
..2	97408-130-101	SCREW-TAPTITE, PH	+B-3X10 FE FZY	3	
..2	97624-905-410	KNOB-POWER	VH-0800 C7096	1	
...3	90742-185-069	RESIN-ABS	VH-0800 C7096(JEIL)		
..2	97624-973-010	KNOB	RESET, VH-0800 C7096	1	
..2	97654-901-611	LENS	ACRYL NATURAL(LED)	3	
..2	98901-902-330	BEZEL-ASSY	D486S/25N, ABS VH0800-C7096	1	

ASSY - COVER

LEVEL	SEC CODE	DESCRIPTION	SPECIFICATION	Q'TY	LOCATION NUMBER
.1	99102-62A-001	ASSY-COVER	SD620A/716A/SD721	1	
..2	96121-907-210	CHASSIS-COVER	EGI T1.0	1	
..2	97088-130-062	SCREW-BH	+M386 FE FZW	3	

POWER - SUPPLY

LEVEL	SEC CODE	DESCRIPTION	SPECIFICATION	Q'TY	LOCATION NUMBER
.1	99123-740-001	ASSY-SMPS	PS-103, FCC	1	
..2	94969-101-030	SMPS	PS-103 (SEMCO)	1	
..2	96613-919-410	LEVER-S/W	SWITCH 0VH-0800 C	1	
...3	90742-185-069	RESIN-ABS	VH-0800 C7096(JEIL)	1	
..2	97088-130-062	SCREW-BH	+M3*6 FE FZW	3	
.1	99123-740-002	ASSY-SMPS	PS-104(DEMAN), FCC	1	
..2	94969-101-040	SMPS	PS-104 (TAEPO)	1	
..2	96613-919-410	LEVER-S/W	SWITCH 0VH-0800 C	1	
...3	90742-185-069	RESIN-ABS	VH-0800 C7096(JEIL)	1	
..2	97088-130-062	SCREW-BH	+M3*6 FE FZW	3	

LEVEL	SEC CODE	DESCRIPTION	SPECIFICATION	Q'TY	LOCATION NUMBER
.1	99123-740-003	ASSY-SMPS	PS-103C, UK	1	
..2	94969-101-031	SMPS	PS-103C (SEMCO)	1	
..2	96613-919-410	LEVER-S/W	SWITCH 0VH-0800 C	1	
...3	90742-185-069	RESIN-ABS	VH-0800 C7096(JEIL)	1	
..2	97088-130-062	SCREW-BH	+M3*6 FE FZW	3	

LABEL

LEVEL	SEC CODE	DESCRIPTION	SPECIFICATION	Q'TY	LOCATION NUMBER
.1	99129-740-001	ASSY-SYSTEM LABEL	UL_CSA_FCC, NOM	1	
..2	98114-003-010	LABEL-ID	UL-E140750/CSA-LR91748	1	
..2	98114-700-010	LABEL	NOM , 37X32MM)	2	
..2	98114-740-004	LABEL-ETC	NOM, 35*40MM, AL SYSTEM	1	
.1	99129-740-002	ASSY-BAR CODE	BAR CODE & INSPECTOR	1	
..2	98114-720-011	LABEL-BARCODE	SET, 50*12MM, ALL MODEL	1	
..2	98114-914-310	LABEL-BATTERY	60MMX35MM	1	
..2	98114-914-510	LABEL	INSPECTOR CONFIRM FOR PC	1	
.1	99129-EXT-001	ASSY-NOM LABEL	NOM LABEL(MEXICO)	1	
..2	98114-700-010	LABEL	NOM , 37X32MM, ALL MODEL	2	
..2	98114-740-004	LABEL-ETC	NOM LABEL, 35*40MM, ALL MODI	1	
.1	99131-860-901	ASSY-SYSTEM LABEL	UL_CSA_FCC	1	
..2	98114-003-010	LABEL-ID	UL-E140750/CSA-LR91748	1	
.1	99131-860-902	ASSY-SYSTEM LABEL	UL_CSA_FCC, DOC	1	
..2	98114-003-010	LABEL-ID	UL-E140750/CSA-LR91748	1	
..2	98114-911-010	LABEL-ETC	DOC SAFETY, 41*34MM, C	1	
.1	99131-860-904	ASSY-SYSTEM LABEL	TUV_FTZ_EMKO, GND	1	
..2	98034-670-984	LABEL-ETC	GROUND CAUTION, 45*12	1	
..2	98114-386-105	LABEL-ID	EUROPE	1	
.1	99131-860-905	ASSY-SYSTEM LABEL	CSA_DOC(R DG.)	1	
..2	98114-003-011	LABEL-ID	UL-E140750/CSA-LR91748	1	
.1	99131-860-906	ASSY-SYSTEM LABEL	TUV_FTZ_EMKO, GND, 240V	1	
..2	98034-670-984	LABEL-ETC	GROUND CAUTION, 45X12	1	
..2	98114-386-105	LABEL-ID	EUROPE	1	
..2	98114-840-013	LABEL-ETC	CAUTION, 240V ONLY,	1	

SOFTWARE(DOS)

LEVEL	SEC CODE	DESCRIPTION	SPECIFICATION	Q'TY	LOCATION NUMBER
.1	99116-500-FR1	ASSY-S/W&MNL(MSDOS)	V5.0, FR, 5.25"SEC	1	

LEVEL	SEC CODE	DESCRIPTION	SPECIFICATION	Q'TY	LOCATION NUMBER
..2	94090-500-093	MS-DOS	V5.0, FR, 5.25"	1	
.1	99116-500-FR2	ASSY-S/W&MNL(MSDOS)	V5.0, FR, 3.5"SEC	1	
..2	94091-500-090	MS-DOS	V5.0, FR, 3.5"	1	
.1	99116-500-GE1	ASSY-S/W&MNL(MSDOS)	V5.0, GE, 5.25"SEC	1	
..2	94090-500-094	DISKETTE-S/W ASSY	MS-DOS 5.0 5.25"	1	
.1	99116-500-GE2	ASSY-S/W&MNL(MSDOS)	V5.0, GE, 3.5"SEC	1	
..2	94091-500-091	DISKETTE-S/W ASSY	MS-DOS 5.0 3.5"	1	
.1	99116-500-IT1	ASSY-S/W&MNL(MSDOS)	V5.0, IT, 5.25"SEC	1	
..2	94090-500-096	MS-DOS	V5.0, IT, 5.25"	1	
.1	99116-500-IT2	ASSY-S/W&MNL(MSDOS)	V5.0, IT, 3.5"SEC	1	
..2	94091-500-093	MS-DOS	V5.0, IT, 3.5".	1	
.1	99116-500-SP1	ASSY-S/W&MNL(MSDOS)	V5.0, SP, 5.25"SEC	1	
..2	94090-500-095	MS-DOS	V5.0, SP, 5.25"	1	
.1	99116-500-SP2	ASSY-S/W&MNL(MSDOS)	V5.0, SP, 3.5"SEC	1	
..2	94091-500-092	MS-DOS	V5.0, SP, 3.5"	1	
1	99116-500-US1	ASSY-S/W&MNL(MSDOS)	V5.0, US, 5.25"SEC	1	
..2	98134-007-002	MS-DOS	V5.0, ENG, 5.25"	1	
.1	99116-500-US2	ASSY-S/W&MNL(MSDOS)	V5.0, US, 3.5"SEC	1	
..2	98134-007-001	MS-DOS	V5.0, ENG, 3.5"	1	
.1	99116-500-US3	ASSY-S/W&MNL(MSDOS)	V5.0, US, 5.25"OEM, DPC	1	
..2	98134-007-006	MS-DOS	V5.0, ENG(DT), 5.25"	1	
.1	99116-500-US4	ASSY-S/W&MNL(MSDOS)	V5.0, US, 3.5"OEM. DPC	1	
..2	98134-007-005	MS-DOS	V5.0, ENG(DT), 3.5"	1	

SOFTWARE(WINDOWS)

LEVEL	SEC CODE	DESCRIPTION	SPECIFICATION	Q'TY	LOCATION NUMBER
.1	99116-300-FR1	ASSY-S/W&MNL(WINDOW)	V3.0, FR, 5.25"	1	
..2	94092-301-301	MS-WINDOWS	V3.0, FR, 5.25", 1/5	1	
..2	94092-301-302	MS-WINDOWS	V3.0, FR, 5.25", 2/5	1	
..2	94092-301-303	MS-WINDOWS	V3.0, FR, 5.25", 3/5	1	
..2	94092-301-304	MS-WINDOWS	V3.0, FR, 5.25", 4/5	1	
..2	94092-301-305	MS-WINDOWS	V3.0, FR, 5.25", 5/5	1	
..2	94099-900-910	DISKETTE-BLANK	5.25", M-2HD	5	
..2	98114-913-180	LABEL-DISKETTE	MS-WINDOWS, FR, 5.25"	5	
..2	98134-040-020	MANUAL-O/S GUIDE	MS-WINDOWS, V3.0, FRAN	1	
..2	98633-971-020	FOLDER-DISKETTE	5.25", EXPORT, PROGRAM	1	
.1	99116-300-FR2	ASSY-S/W&MNL(WINDOW)	V3.0, FR, 3.5"	1	
..2	94093-301-301	MS-WINDOWS	V3.0, FR, 3.5", 1/7	1	
..2	94093-301-302	MS-WINDOWS	V3.0, FR, 3.5", 2/7	1	

LEVEL	SEC CODE	DESCRIPTION	SPECIFICATION	Q'TY	LOCATION NUMBER
..2	94093-301-303	MS-WINDOWS	V3.0, FR, 3.5", 3/7	1	
..2	94093-301-304	MS-WINDOWS	V3.0, FR, 3.5", 4/7	1	
..2	94093-301-305	MS-WINDOWS	V3.0, FR. 3.5", 5/7	1	
..2	94093-301-306	MS-WINDOWS	V3.0, FR, 3.5", 6/7	1	
..2	94093-301-307	MS-WINDOWS	V3.0, FR, 3.5", 7/7	1	
..2	94099-000-010	DISKETTE-BLANK	3.5", M-2DD	7	
..2	98114-913-260	LABEL-DISKETTE	MS-WINDOWS, FR, 3.5"	7	
..2	98134-040-020	MANUAL-O/S GUIDE	MS-WINDOWS, V3.0, FR	1	
..2	98633-971-020	FOLDER-DISKETTE	5.25", EXPORT, PROGRAM	1	
.1	99116-300-GE1	ASSY-S/W&MNL(WINDOW)	V3.0, GE, 5.25"	1	
..2	94092-301-401	MS-WINDOWS	V3.0, GE, 5.25", 1/5	1	
..2	94092-301-402	MS-WINDOWS	V3.0, GE, 5.25", 2/5	1	
..2	94092-301-403	MS-WINDOWS	V3.0, GE, 5.25", 3/5	1	
..2	94092-301-404	MS-WINDOWS	V3.0, GE, 5.25", 4/5	1	
..2	94092-301-405	MS-WINDOWS	V3.0, GE, 5.25", 5/5	1	
..2	94099-900-910	DISKETTE-BLANK	5.25", M-2HD	5	
..2	98114-913-170	LABEL-DISKETTE	MS-WINDOWS, GE, 5.25"	5	
..2	98134-040-030	MANUAL-O/S GUIDE	MS-WINDOWS, V3.0, GE	1	
..2	98633-971-020	FOLDER-DISKETTE	5.25", EXPORT, PROGRAM	1	
.1	99116-300-GE2	ASSY-S/W&MNL(WINDOW)	V3.0, GE, 3.5"	1	
..2	94093-301-401	MS-WINDOWS	V3.0, GE, 3.5", 1/7	1	
..2	94093-301-402	MS-WINDOWS	V3.0, GE, 3.5", 2/7	1	
..2	94093-301-403	MS-WINDOWS	V3.0, GE, 3.5", 3/7	1	
..2	94093-301-404	MS-WINDOWS	V3.0, GE, 3.5", 4/7	1	
..2	94093-301-405	MS-WINDOWS	V3.0, GE, 3.5", 5/7	1	
..2	94093-301-406	MS-WINDOWS	V3.0, GE, 3.5", 6/7	1	
..2	94093-301-407	MS-WINDOWS	V3.0, GE, 3.5", 7/7	1	
..2	94099-000-010	DISKETTE-BLANK	3.5", M-2DD	7	
..2	98114-913-250	LABEL-DISKETTE	MS-WINDOWS, GE, 3.5"	7	
..2	98134-040-030	MANUAL-O/S GUIDE	MS-WINDOWS, V3.0, GE	1	
..2	98633-971-020	FOLDER-DISKETTE	5.25", EXPORT, PROGRAM	1	
.1	99116-300-IT1	ASSY-S/W&MNL(WINDOW)	V3.0, IT, 5.25"	1	
..2	94092-301-501	MS-WINDOWS	V3.0, IT, 5.25", 1/5	1	
..2	94092-301-502	MS-WINDOWS	V3.0, IT, 5.25", 2/5	1	
..2	94092-301-503	MS-WINDOWS	V3.0, IT, 5.25", 3/5	1	
..2	94092-301-504	MS-WINDOWS	V3.0, IT, 5.25", 4/5	1	
..2	94092-301-505	MS-WINDOWS	V3.0, IT, 5.25", 5/5	1	
..2	94099-000-910	DISKETTE-BLANK	5.25", M-2HD	5	
..2	98114-913-160	LABEL-DISKETTE	MS-WINDOWS, IT, 5.25"	5	
..2	98134-040-040	MANUAL-O/S GUIDE	MS-WINDOWS. V3.0, IT	1	
..2	98633-971-020	FOLDER-DISKETTE	5.25", EXPORT, PROGRAM	1	
.1	99116-300-IT2	ASSY-S/W&MNL(WINDOW)	V3.0, IT, 3.5"	1	
..2	94093-301-501	MS-WINDOWS	V3.0, IT, 3.5", 1/7	1	
..2	94093-301-502	MS-WINDOWS	V3.0, IT, 3.5", 2/7	1	
..2	94093-301-503	MS-WINDOWS	V3.0, IT, 3.5", 3/7	1	
..2	94093-301-504	MS-WINDOWS	V3.0, IT, 3.5", 4/7	1	
..2	94093-301-505	MS-WINDOWS	V3.0, IT, 3.5", 5/7	1	
..2	94093-301-506	MS-WINDOWS	V3.0, IT, 3.5", 6/7	1	
..2	94093-301-507	MS-WINDOWS	V3.0, IT, 3.5", 7/7	1	
..2	94099-000-010	DISKETTE-BLANK	3.5", M-2DD	7	
..2	98114-913-240	LABEL-DISKETTE	MS-WINDOWS, IT, 3.5",	7	
..2	98134-040-040	MANUAL-O/S GUIDE	MS-WINDOWS. V3.0, IT	1	
..2	98633-971-020	FOLDER-DISKETTE	5.25", EXPORT, PROGRAM	1	

LEVEL	SEC CODE	DESCRIPTION	SPECIFICATION	Q'TY	LOCATION NUMBER
.1	99116-300-SP1	ASSY-S/W&MNL(WINDOW)	V3.0, SP, 5.25"	1	
..2	94093-301-601	MS-WINDOWS	V3.0, SP, 5.25", 1/5	1	
..2	94093-301-602	MS-WINDOWS	V3.0, SP, 5.25", 2/5	1	
..2	94093-301-603	MS-WINDOWS	V3.0, SP, 5.25", 3/5	1	
..2	94093-301-604	MS-WINDOWS	V3.0, SP, 5.25", 4/5	1	
..2	94093-301-605	MS-WINDOWS	V3.0, SP, 5.25", 5/5	1	
..2	94099-900-910	DISKETTE-BLANK	5.25", M-2HD	5	
..2	98114-913-190	LABEL-DISKETTE	MS-WINDOWS, IT, 5.25"	5	
..2	98134-040-050	MANUAL-O/S GUIDE	MS-WINDOWS. V3.0, SP	1	
..2	98633-971-020	FOLDER-DISKETTE	5.25", EXPORT, PROGRAM	1	
.1	99116-300-SP2	ASSY-S/W&MNL(WINDOW)	V3.0, SP, 3.5"	1	
..2	94093-301-601	MS-WINDOWS	V3.0, SP, 3.5", 1/7	1	
..2	94093-301-602	MS-WINDOWS	V3.0, SP, 3.5", 2/7	1	
..2	94093-301-603	MS-WINDOWS	V3.0, SP, 3.5", 3/7	1	
..2	94093-301-604	MS-WINDOWS	V3.0, SP, 3.5", 4/7	1	
..2	94093-301-605	MS-WINDOWS	V3.0, SP, 3.5", 5/7	1	
..2	94099-000-606	MS-WINDOWS	V3.0, SP, 3.5", 6/7	1	
..2	94099-000-607	MS-WINDOWS	V3.0, SP, 3.5", 7/7	1	
..2	94099-000-010	DISKETTE-BLANK	3.5", M-2DD	7	
..2	98114-913-270	LABEL-DISKETTE	MS-WINDOWS, SP, 5.25"	7	
..2	98134-040-050	MANUAL-O/S GUIDE	MS-WINDOWS. V3.0, SP	1	
..2	98633-971-020	FOLDER-DISKETTE	5.25', EXPORT, PROGRAM	1	
.1	99116-300-US1	ASSY-S/W&MNL(WINDOW)	V3.0, US, 5.25"	1	
..2	94092-300-121	MS-WINDOWS	V3.0, ENG, 5.25", 1/5, O	1	
..2	94092-300-221	MS-WINDOWS	V3.0, ENG, 5.25", 2/5, O	1	
..2	94092-300-321	MS-WINDOWS	V3.0, ENG, 5.25", 3/5, O	1	
..2	94092-300-421	MS-WINDOWS	V3.0, ENG, 5.25", 4/5, O	1	
..2	94092-300-521	MS-WINDOWS	V3.0, ENG, 5.25", 5/5, O	1	
..2	94099-900-910	DISKETTE-BLANK	5.25", M-2HD	5	
..2	98114-913-110	LABEL-DISKETTE	MS-WINDOWS, ENG, 3.5"	5	
..2	98134-040-010	MANUAL-O/S GUIDE	MS-WINDOWS, V3.0, ENG	1	
..2	98633-971-020	FOLDER-DISKETTE	5.25", EXPORT, PROGRAM	1	
.1	99116-300-US2	ASSY-S/W&MNL(WINDOW)	V3.0, US, 3.5"	1	
..2	94093-300-111	MS-WINDOWS	V3.0, ENG, 3.5", 1/7, OE	1	
..2	94093-300-211	MS-WINDOWS	V3.0, ENG, 3.5", 2/7, OE	1	
..2	94093-300-311	MS-WINDOWS	V3.0, ENG, 3.5", 3/7, OE	1	
..2	94093-300-411	MS-WINDOWS	V3.0, ENG, 3.5", 4/7, OE	1	
..2	94093-300-511	MS-WINDOWS	V3.0, ENG, 3.5", 5/7, OE	1	
..2	94093-300-611	MS-WINDOWS	V3.0, ENG, 3.5", 6/7, OE	1	
..2	94093-300-711	MS-WINDOWS	V3.0, ENG, 3.5", 7/7, OE	1	
..2	94099-000-010	DISKETTE-BLANK	3.5", M-2DD	7	
..2	98114-913-210	LABEL-DISKETTE	MS-WINDOWS, ENG, 3.5"	7	
..2	98134-040-010	MANUAL-O/S GUIDE	MS-WINDOWS, V3.0, ENG	1	
..2	98633-971-020	FOLDER-DISKETTE	5.25", EXPORT, PROGRAM	1	
.1	99116-300-US3	ASSY-S/W&MNL(WINDOW)	V3.0, US, 5.25"(DPC)	1	
..2	94092-300-121	MS-WINDOWS	V3.0, ENG, 5.25", 1/5, O	1	
..2	94092-300-221	MS-WINDOWS	V3.0, ENG, 5.25", 2/5, O	1	
..2	94092-300-321	MS-WINDOWS	V3.0, ENG, 5.25", 3/5, O	1	
..2	94092-300-421	MS-WINDOWS	V3.0, ENG, 5.25", 4/5, O	1	
..2	94092-300-521	MS-WINDOWS	V3.0, ENG, 5.25", 5/5, O	1	
..2	94099-900-910	DISKETTE-BLANK	5.25", M-2HD	5	
..2	98114-913-110	LABEL-DISKETTE	MS-WINDOW, ENG, 5.25"	5	

LEVEL	SEC CODE	DESCRIPTION	SPECIFICATION	Q'TY	LOCATION NUMBER
..2	98134-040-010	MANUAL-O/S GUIDE	MS-WINDOWS, V3.0, ENG	1	
..2	98134-943-860	FOLDER-DISKETTE	PROGRAM LICENCE(DPC)	1	
.1	99116-300-US4	ASSY-S/W&MNL(WINDOW)	V3.0, US, 3.5"(DPC)	1	
..2	94093-300-111	MS-WINDOWS	V3.0, ENG, 3.5", 1/7, OE	1	
..2	94093-300-211	MS-WINDOWS	V3.0, ENG, 3.5", 2/7, OE	1	
..2	94093-300-311	MS-WINDOWS	V3.0, ENG, 3.5", 3/7, OE	1	
..2	94093-300-411	MS-WINDOWS	V3.0, ENG, 3.5", 4/7, OE	1	
..2	94093-300-511	MS-WINDOWS	V3.0, ENG, 3.5", 5/7, OE	1	
..2	94093-300-611	MS-WINDOWS	V3.0, ENG, 3.5", 6/7, OE	1	
..2	94093-300-711	MS-WINDOWS	V3.0, ENG, 3.5", 7/7, OE	1	
..2	94099-000-010	DISKETTE-BLANK	3.5", M-2DD	7	
..2	98114-913-210	LABEL-DISKETTE	MS-WINDOWS, ENG, 3.5"	7	
..2	98134-040-010	MANUAL-O/S GUIDE	MS-WINDOWS, V3.0, ENG	1	
..2	98134-943-860	FOLDER-DISKETTE	PROGRAM LICENCE(DPC)	1	
.1	99116-310-US2	ASSY-S/W&MNL(WINDOW)	V3.1, 3.5", ENG	1	
..2	94091-500-300	MS-WINDOWS	V3.1, ENG, 3.5", SEC ENG	1	
.1	99116-310-US4	ASSY-S/W&MNL(WINDOW)	V3.1, 3.5", DATATRAIN	1	
..2	94091-500-301	DISKETTE-S/W ASSY	MS-WIN 3.1 3.5 DT ENG	1	

USER'S GUIDE

LEVEL	SEC CODE	DESCRIPTION	SPECIFICATION	Q'TY	LOCATION NUMBER
.1	99116-925-001	ASSY-MANUAL(GUIDE)	US, SD925, USER'S GUIDE)	1	
..2	98134-925-001	MANUAL	USER'S GUIDE, D486S/25N	1	
..2	98134-486-010	MANUAL	VIDEO GUIDE, SD925	1	

UTILLTY

LEVEL	SEC CODE	DESCRIPTION	SPECIFICATION	Q'TY	LOCATION NUMBER
.1	99116-SYS-251	ASSY-S/W&MNL(UTILITY	SYS, 3.5", ENG, SD925	1	
..2	94095-925-002	DISKETTE-S/W	SYSTEM UTIL, 3.5", SD925	1	
.1	99116-VID-251	ASSY-S/W&MNL(UTILITY	VID, 3.5", ENG, SD925	1	
..2	94095-925-003	DISKETTE-S/W	VIDEO UTIL, 3.5", SD925, 1/3	1	
..2	94095-925-005	DISKETTE-S/W	VIDEO UTIL, 3.5", SD925, 2/3	1	
..2	94095-925-006	DISKETTE-S/W	VIDEO UTIL, 3.5", SD925, 3/3	1	
.1	99116-SYS-252	ASSY-S/W&MNL(UTILITY	SYS, 5.25", ENG, SD925	1	
..2	94095-925-001	DISKETTE-S/W	SYSTEM UTIL, 5.25", SD925	1	
.1	99116-VID-252	ASSY-S/W&MNL(UTILITY VID	5.25, ENG, SD925	1	
..2	94095-925-007	DISKETTE-S/W	VIDEO UTIL, 5.25", SD925, 1/3	1	
..2	94095-925-008	DISKETTE-S/W	VIDEO UTIL, 5.25", SD925, 2/3	1	
..2	94095-925-004	DISKETTE-S/W	VIDEO UTIL, 5.25", SD925, 3/3	1	

POWER CODE

LEVEL	SEC CODE	DESCRIPTION	SPECIFICATION	Q'TY	LOCATION NUMBER
.1	99118-923-001	ASSY-POWER CORD	115V, USA STANDARD	1	
..2	93053-861-620	POWER-CORD	PV0305CBS6F105CGSVT	1	
..2	98654-906-010	PE BAG	HDPE 100	1	
.1	99118-923-002	ASSY-POWER CORD	240V, UK STANDARD	1	
..2	93053-862-210	POWER CORD	GTBS3, KS16, 7.5F, B	1	
..2	98034-932-270	LABEL-POWER	156*51 (UK. VERSION)	1	
..2	98654-906-010	PE BAG	HDPE 100	1	
.1	99118-923-003	ASSY-POWER CORD	40V, EUROP STANDARD	1	
..2	93053-860-810	POWER CORD	KP4819DKS16AGTCE3	1	
..2	98654-906-010	PE BAG	HDPE 100	1	
.1	99118-923-004	ASSY-POWER CORD	240V, HOJU STANDARD	1	
..2	93054-810-410	POWER CORD	SP500/3ASL+024 (SW)	1	
..2	98654-906-010	PE BAG	HDPE 100	1	

DIAGNOSTIC PROGRAM

1. What is LOADER Diagnostic Program ?

LOADER diagnestic program is designed to test AT System. Since it is designed by module, you can test each components individually. The diagnostic program also has the automatic test option, so you can test the hardware automatically and run the system overnight by itself. The diagnostic program is consist of several files. Those files are as follow.

LOADER. COM
DIAG. SUB
VGA. EXE
KEYIN. DAT
HELP. DAT
ERROR. REC

LOADER. COM	is the program that loads DIAG. SUB and executes it ... Menu Driver.
DIAG. SUB	is a main program in the diagnostic softwares ... Test Program.
VGA. EXE	is the program that tests EGA/VGA.
HELP. DAT	is the file that contains help information.
KEYIN. DAT	is the file that contains the order of the test in the automatic test.
ERROR. REC	is the file that is stored the error message occurred during the test.

※ *This diagnostic program can only work under DOS 3.XX or higher environment.*

2. How To Load The Diagnostic Program?

2.1 Preparation

Before the testing you need the following things to test some areas.

Blank Floppy Diskette.	Needed when testing floppy drive.
External Serial Loop-Back.	Needed when testing serial port test. See Appendix for connection in loop-back.
External Parallel Loop-Back.	Needed when testing parallel port test. See Appendix for connection in loop-back.

Parallel Printer. Needed when testing the printer.
Mouse. Needed when testing the mouse.
Math coprocessor. Needed to test coprocessor.

2.2 Installation

You may run the diagnostic program from the floppy diskette directly or the hard disk. If you want to run it from the floppy diskette, insert the diagnostic program diskette to the floppy drive and load the program. If you want run from the hard disk, create the directory for diagnostic program, copy all files from the diagnostic program diskette to the directory, and load the program from the hard disk. When you run the diagnostic program from the floppy diskette, make sure you make backup copy of the diskette before running it.

2.3. Loading

1) From the drive that has the diagnostic program, type "LOADER" and press 〈Enter〉 Then the following screen will be displayed.

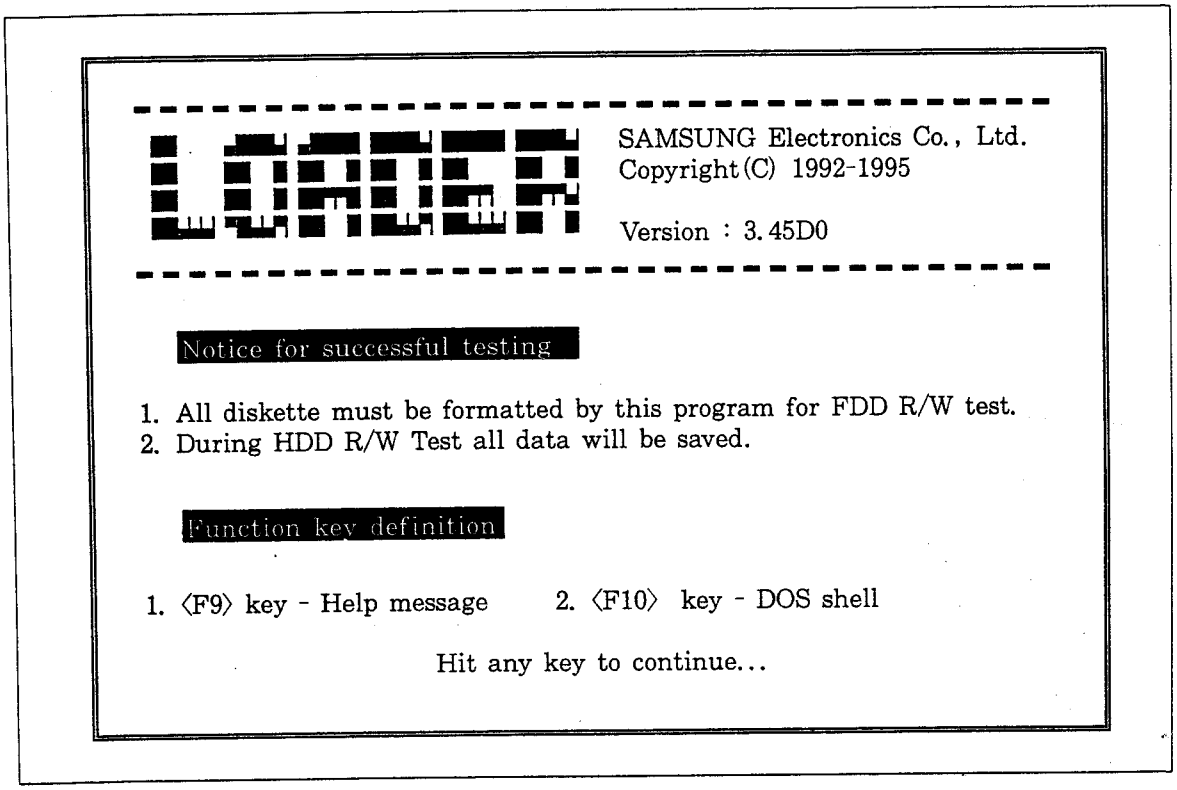

LOADER
SAMSUNG Electronics Co., Ltd.
Copyright(C) 1992-1995
Version : 3.45D0
Notice for successful testing
1. All diskette must be formatted by this program for FDD R/W test.
2. During HDD R/W Test all data will be saved.
Function key definition
1. 〈F9〉 key - Help message
2. 〈F10〉 key - DOS shell
Hit any key to continue...

Figure 2.1. Warning Notices and help message

① You have to format the blank diskette with this program.

2) Press 〈Enter〉 to proceed to the next step. Now you are ready to run the diagnostic program.

※ "LOADER" option

C:\LOADER〉 LOADER /?
AT System Diagnostics. Copyright(C) SAMSUNG Electronics Co., Ltd. 1992

USE : LOADER [/a {nnn2}] [/b] [/c {nnn}] [/f〈file_name〉] [/t {nn}]

〈Command〉
/a: Start without keyin(Aging option)
/b: Use Alkaline battery (S3725 or S3725L Model)
/c: RAM test exchange loop count
/f: Auto test procedure file name (default:keyin.dat)
/t: Aging: Auto mode terminal time (Unit:hour)
/?: Help message

{nnn} : Decimal number

※ *Press 〈F9〉 key to display Help message.*

2.4. Main menu and Selection

The following screen is the main menu of the diagnostic program.

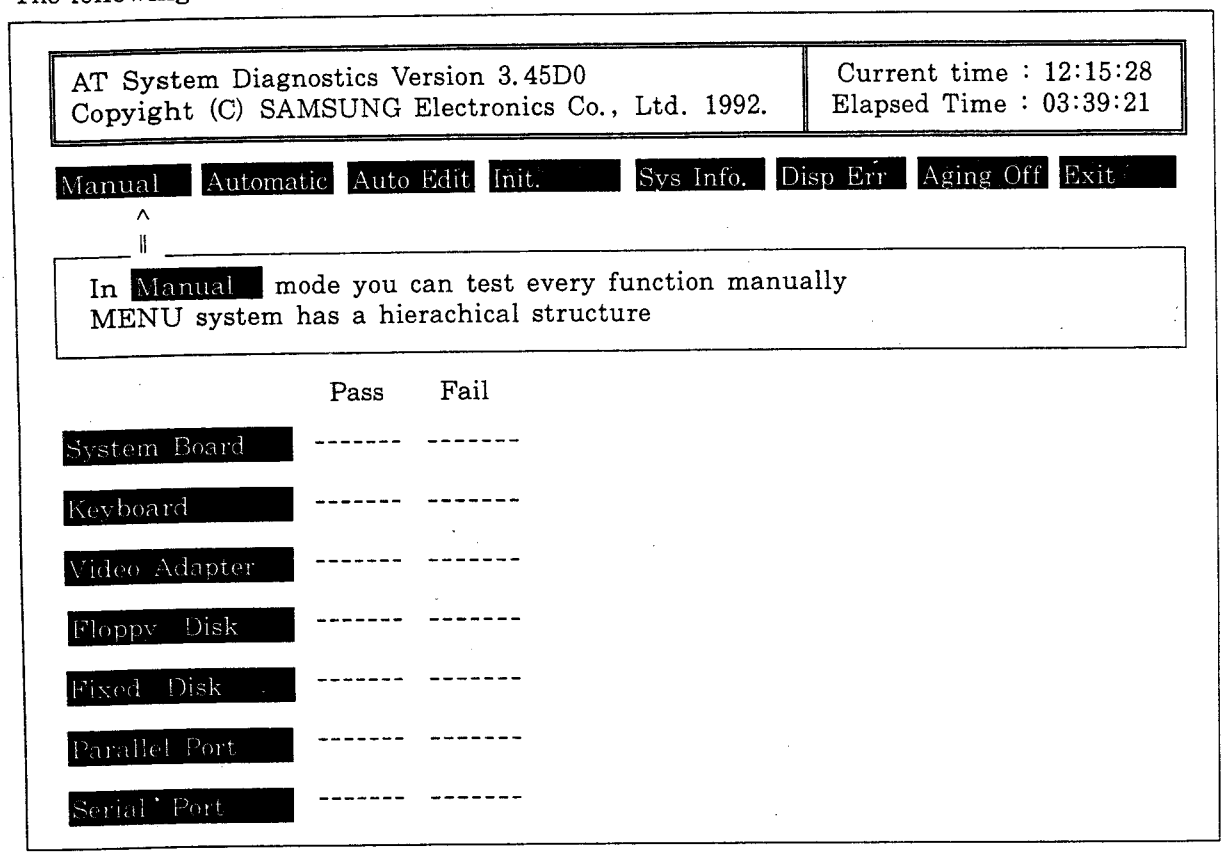


FIGURE 2.2. MAIN MENU

1) All menus have the vertical structures.
2) The orginal cursor is located under Manual .
3) You can move cursor by using <Left Arrow> or <Right Arrow> key.
4) You can invoke sub-menu by using <Enter> or <Down Arrow> key.
5) And also you can invoke sub-menu directly by using corresponding function key <F1> - <F8>.
6) You can invoke the previous menu by using <ESC> or <Up Arrow> key, Quit selection of the menu has the same result.

3. Manual Test

This test should be performed by manually. You may run the test by module for each components of the system. When the test is failed, the error message will be displayed and asks you if you save the error message. You may type "Y" to save or "N"/<ESC> not to save it. if you save it. If you enter "Y", the error message will be stored in ERROR.REC file. The following screen will be displayed when you select Manual from the main menu.

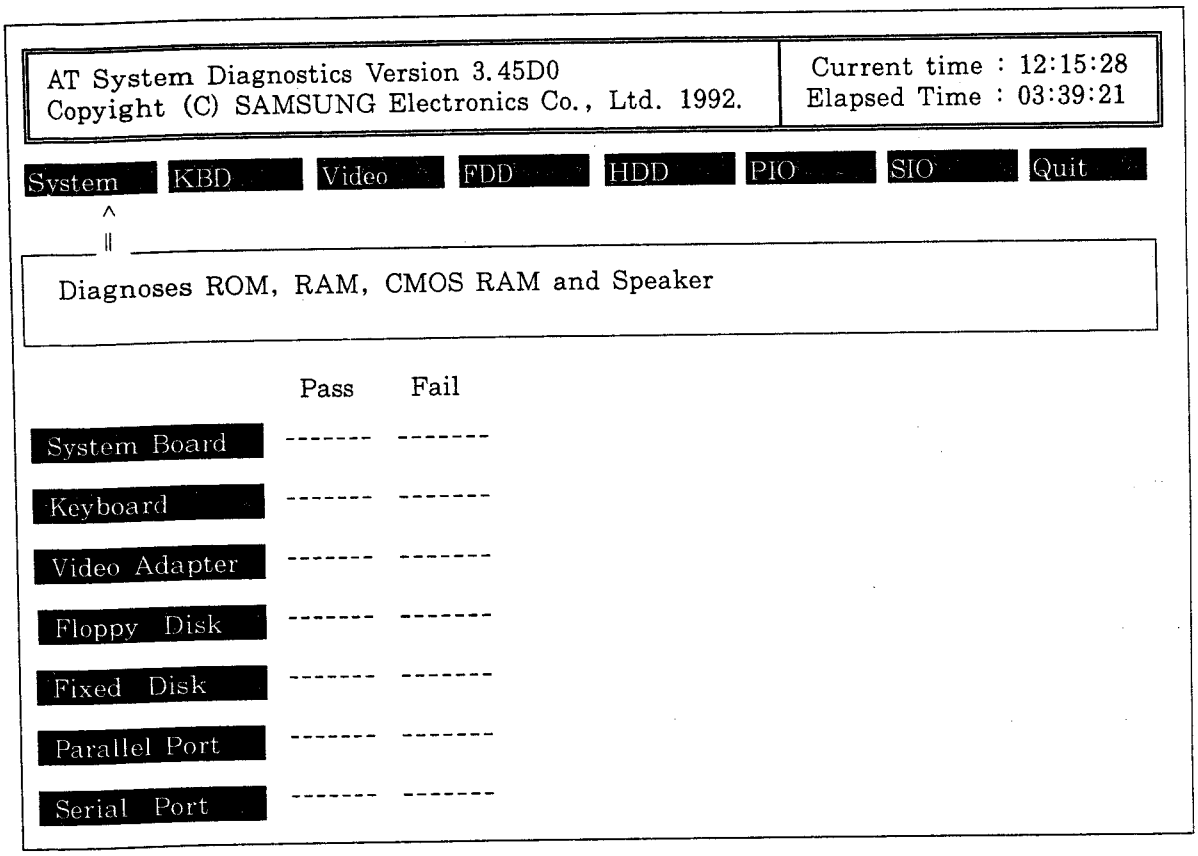


Figure 3. 1. Manual Test

3. 1. System menu

1) Coprocesr : Test intialize, data transfer, status word, tag word, arithmetic, command, and exception of the coprocessor when installed.

2) ROM : Test, Checksums of extebned BIOS ROM and system ROM modules. And test range is (C000:0000 - D000:FFFF]

3) RAM : Test 640K basic RAM and extended memory up to 4 GB. You can terminate <F8> key the program during the test.

4) CMOS RAM : Test CMOS RAM(10H - 3FH). The current values of the CMOS RAM will be saved and restored after completing the test.

5) Speaker : Test the speaker sound. You have to answer "Y" or "N" when the system asks *you "Did it sound good? (Y/N)"* after completing the test.

6) Mouse : Test the movement of the mouse. Mouse device driver should be installed before testing.

7) Quit : Go back to the main menu. You may also return to the main menu by pressing <ESC> or <Up Arrow> keys.

3.2. KBD Menu

1) Reset KBD : Test reset command in keyboard. Send reset command to the keyboard processor and receive the code value that shows that the reset is completed.

2) KBCD BAT : Test keyboard controller.

3) Scan Code : Test all the possible scan code when pressing the keyboard. The keyboard screen will be displayed and whenever you press the key, that key will be blinked on the keyboard. You have to make a decision if the keyboard works correctly. When finished the test, press <ESC> key twice to exit from the test. The program supports several different SAMSUNG keyboard layout. You may ignore all other keyborad layout except US 101 & UK 102 keyboard layout.

4) Quit : Go back to the main menu.

3.3. Video Menu

1) Mode Test : Test possible functions that can be displayed on the screen. If EGA monitor attached on the VGA card. only EGA display function can be tested.

2) Chip Diag : Test EGA/VGA register, Video RAM, External Palette RAM. Read Mode 0/1, and Write Mode 0/1/2.

3.4. FDD Menu

1) FDD Reset : Reset the floppy disk drive. If run in manual mode, it tests and displays the status of the diskette surface.

2) Format : Format the diskette. You have to select the correct diskette. After format, you may use the diskette as DOS formatted diskette. But middle 2 track, and internal 1 track will be checked as bad to establish the field that is needed while FDD R/W test in this format. So 6 track of the FAT will be displayed as bad.

3) R/W Test : Test read/write functions of the drive, but not test the quality of the diskette. If found bad sector, the sector will be marked to pass in the next test.

4) Seeking : Test random and sequential seek function.

5) Motor Spd : Measure the speed of the diskette drive motor 10 times. Measured speed will be displayed as maximum and minimum speed with MSEC.

6) Quit : Go back to main menu.

3.5. HDD Menu

1) HDD Reset : Test hard disk device controller.

2) Forment : Perform the low level format the AT standard hard disk. You can input the factory bad sector map and interleave.

3) R/W test : Test read/write with saving the current data. If Aging mode is On, test all track while test part of the track if it is Off.

4) Seeking : Test random and sequential seek function of the hard disk head.

5) Parking : Park the hard disk head. You must reset the system.

6) ECC Test : Test the Error detection and correction logic.

7) Scanning : Scan the surface of the hard disk and displays the error sector map.

8) Quit : Go back to main menu.

3.6. PIO Menu

1) Loopback : Test internal and external loopback and interrupt line. You have to attach the loopback connector before the testing. The Loopback connection is as follows.

2) Printer : Test the printing functions. You have to attach the printer before the testing.

3.7. SIO Menu

You must attach the loopback connector before testing.

1) Manual : Select port and internal or external mode. When the mode is internal, the baud rate is 2400. When the mode is external, baud rate is 9600, 1200, and 150. Test all the combination of parity, data bits, and stop bits.

2) Auto : Test all combination of parity, data bits and stop bits with 9600/1200/150 baud rate in both internal and external mode. Since COM2 does not have physical port, the COM2 external loopback test will be failed in this test.

3) Modem : Test internal modem.

4) Quit : Go back to main menu.

4. Automatic Test

The automatic test will be performed the test without any input from the user by the order that is defined in KEYIN.DAT.
The following screen will be displayed when you select Automatic.

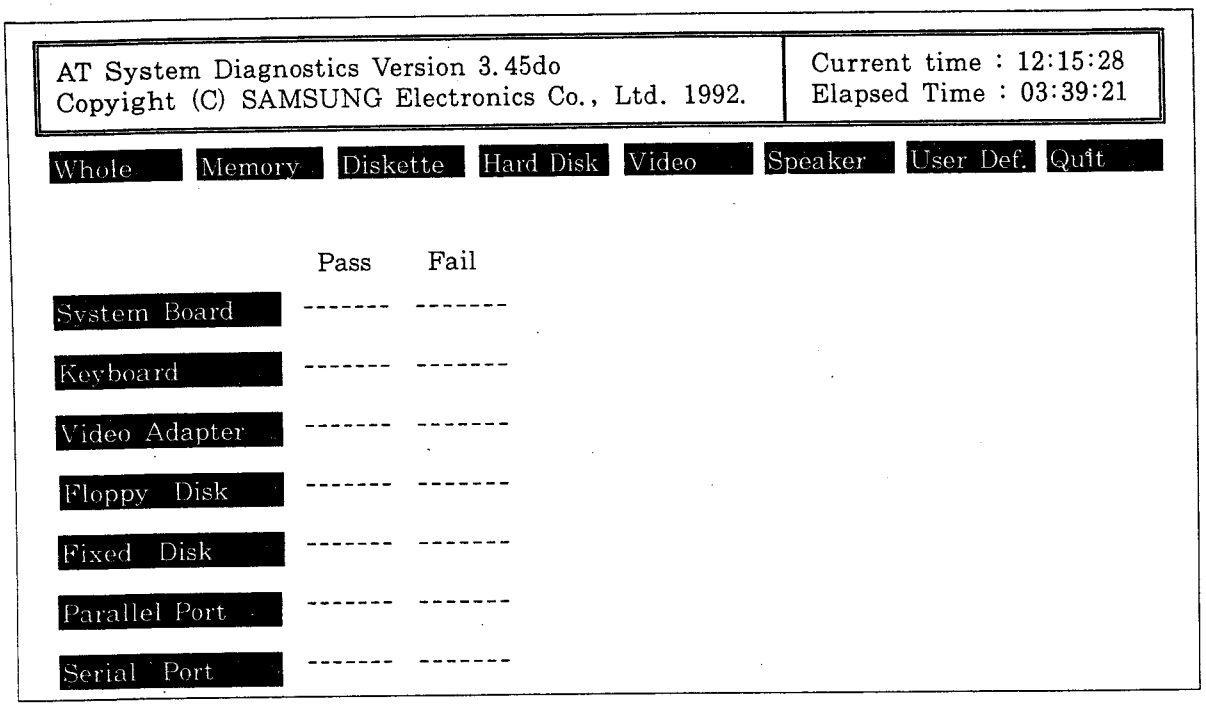


Figure 4.1. Automatic Test

4.1. Whole test
Test all functions of the system. The Whole selection calls all other automatic test (Memory, Video, Diskette, Hard disk, Speaker, SIO, PIO, Keyboard, then perform the task.

4.2. Memory test
Test Coprocessor, BIOS ROM, Additional System ROM, I/O Adapter ROM, Base/Extended RAM and CMOS ROM repeatedly.

4.3. Diskette test
Test FDD Reset, R/W Test, Seeking and Motor Spd repeatedly. It tests floppy disk drive according to system configuration.

4.4. Hard disk test
Test HDD Reset, R/W Test, ECC Test and Seeking repeatedly. It tests fixed disk driver according to system configuration.

4.5. Video test
Test Mode Test and Chip diag repeatedly.

4.6. Speaker test
Test the sound of the speaker. It creates the sound Do, Re, Mi, Fa, ... Si, Do, Do, Si, ... Mi, Re, Do with increases up to 1112 Hz.

4.7. User Def. test
The user may be define the test order and execute it.

4.8. Quit
Return to Main Menu.

4.9. How to Run The Automatic Test ?

1) Once the automatic test was started, the program continuously runs without stopping. You only can stop the program with <CTRL>+<C>.
2) When one automatic test calls other test, the called test will be performed once and return the test order to the original test. The current Whole test is designed to call other tests and other tests do not call other tests. But you can modify the procedure.
3) You may enter the number of repetition of the test to run before the test starts.
4) KEYIN.DAT file contains the orders of the test. If this file is not existed in the current directory, it will be created. You also may create the file in init. from the main menu.

5. Auto Edit

You may change the orders of the automatic test by selecting Auto Edit from the main menu. If you select Auto Edit the following screen will be displayed.

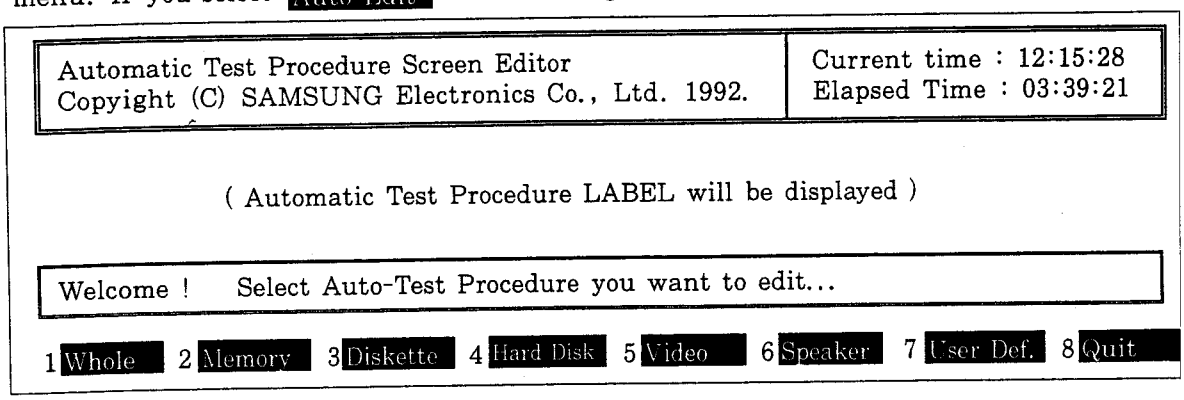

Automatic Test Procedure Screen Editor
Copyright (C) SAMSUNG Electronics Co., Ltd. 1992.
Current time : 12:15:28
Elapsed Time : 03:39:21
(Automatic Test Procedure LABEL will be displayed)
Welcome ! Select Auto-Test Procedure you want to edit...
1 Whole
2 Memory
3 Diskette
4 Hard Disk
5 Video
6 Speaker
7 User Def.
8 Quit

Figure 5.1. Auto Edit

If you select Whole the following screen will be displayed.

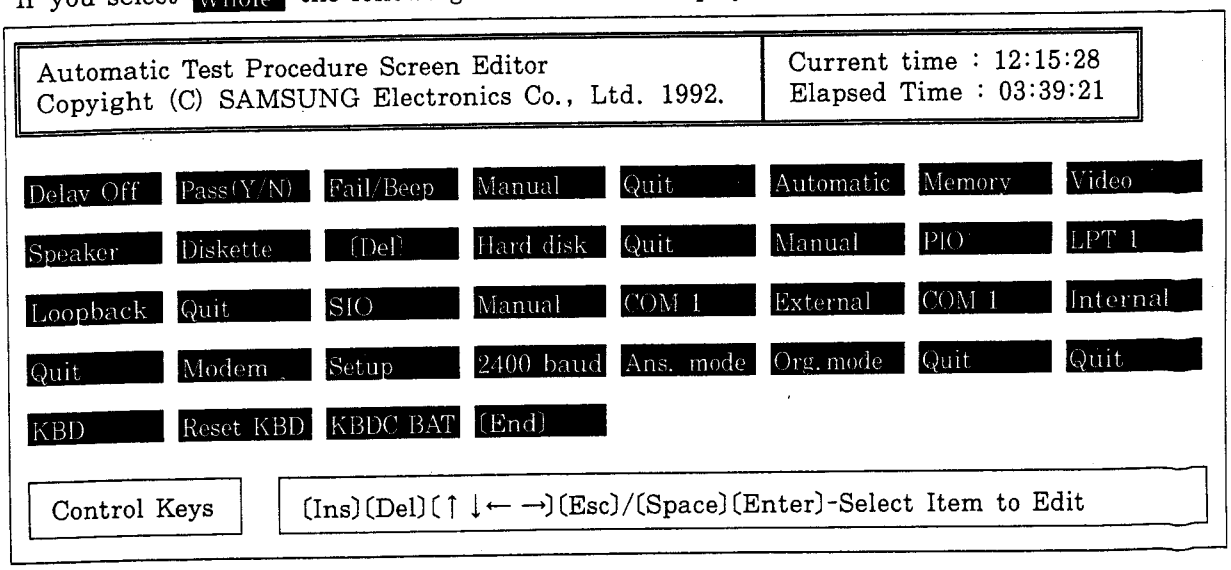


Figure 5.2. Auto Diskette Procedure

You can add or delete the test procedure by using [Ins]/[Del] keys.

5.1. Structure of the Test Order

Test Order can be defined as Scan Code order. Actual value of function is ⟨F1⟩ = BBH ... ⟨F8⟩ = C2H.

In case of Whole, actual test order is ⟨F1⟩-⟨F6⟩-⟨F1⟩-⟨F5⟩-⟨F8⟩-⟨F7⟩-⟨F1⟩..., so flow chart of it is like Figure 5.3.

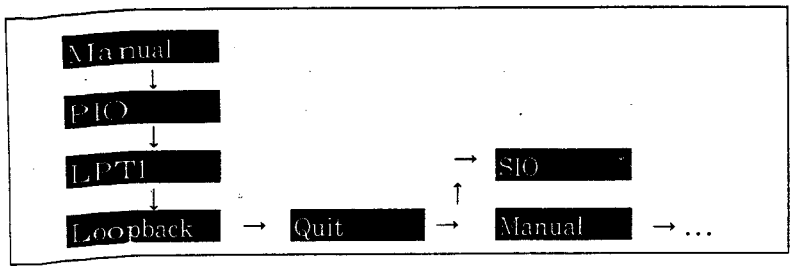


Figure 5.3. Flow Chart of the Test Order

When you delete PIO, the test order will be changed unexpectedly, The Figure 5.4. is the flow chart after deleting PIO only. So you must need to delete LPT1, Loopback and Quit. In order words, you must delete until Quit whenever you delete a test order. Also when you want to add a test procedure, you must not forget to add Quit.

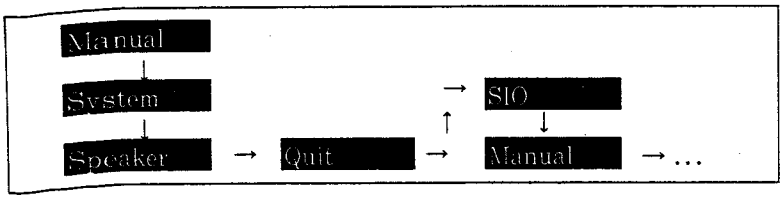


Figure 5.4. Flow Chart after deletion of FDD Reset

5.2. Modification

1) To delete the test item,
   A) move the cursor to the item to be deleted,
   B) press [Del] key.
2) To add the test item,
   A) move the cursor to the location to be added,
   B) press [Ins] key, the [redacted] will be added,
   C) add the new test item.
3) To define [redacted] selection,
   A) move the cursor to the location to be defined,
   B) press ⟨Space Bar⟩, the cursor will be moved to the down of the screen,
   C) move the cursor to the item to be defined,
   D) press ⟨Space Bar⟩ or ⟨Enter⟩ key.
4) [End] is used in the system and can't be deleted.
5) [End] is used in the system and can be deleted.
6) [End], [Del] is used for adjust auto procedure when diagnostics is booting (for example, kill Drv B: test procedure when drive B: is not installed) But edited procedure is not adjusted automatically.
7) Exit editor .. Press ⟨ESC⟩ in [Ins]/[Del] mode.

5.3. Error Handling Definition

1) Delay Off: During the automatic test, skip the message that the system gives to the user. So the user can save the time while testing.
2) Fail Stop: If selected, the automatic test be stopped when a error has occurred and asks

to the user if save the error message.
If not selected, skip the above procedure and store the error message automatically.

3) Pass(Y/N) : If not selected, the user's input is not necessary during the video test.
4) Fail/Beep : If selected, the beep generates 10 times on error dection.

6. The Other Functions

6.1. Init. Function

1) Error Rec : It is used to create or initialize ERROR.REC file.
2) KeyIn.del : It is used to create or initialize KEYIN.DAT file and adjust according to System Configuration.
3) LargeFAIL : It is used to erase large FAIL message.
4) Color : It is used to set color.
5) Ext. Prog : It is used to call external program to run.

6.2. Disp Err. Function

1) It is used to display the error message that has occurred during the test.
In following format. (example)

Serial#	Error Code	Description	Date/Time
0001	0200 00D4	BIOS ROM Checksum Error	1989 01 04 15:11

① Serial# : Error serial number.
② Error Code : 0200 - sort of error (BIOS ROM Checksum Error)
00D4 - detail error condition (refer to HELP)
③ Description : Describes the error briefly.
④ Date/Time : Error occurred time and date.

6.3. Aging Off / Aging On Function

Whenever you select this item, the aging mode is toggled between On and Off.
If current mode is Aging On , the automatic test Whole is loaded once you load LOADER.COM without any user's input. You can use this option for the purpose of burn-in test as
you insert LOADER.COM in the AUTOEXEC.BAT. Aging On Aging mode as OFF, press <CTRL>+<C> to stop the automatic test, and select Aging On from the main menu.

Exit

6.4. Exit Function

Exit selection of the main menu will finish the test and return to DOS environment.
You had better reset the system to run other application software.

Error Message

1. Illegal operation warning ... [00??]

   0001 Invaild key pressed Error
   0002 Invalid number (Chr. input for number) Error
   0003 String too long Error
   0004 Too large number Error
   0005 File already exist Error
   0006 No R/W region exist Error
   0007 Check DIP S/W Error
   0008 Attempt to re-enter memory mode Error

2. RAM (System, Cache, CMOS) ... [01??]

   0100 System RAM 08 xx
   - 10H : High Address Bus Short Error
   - 20H : Data Bus Short Error
   - 30H : Data Pattern R/W Error
   - 31H : Parity Error
   - 40H : Even/Odd Bank Access Error
   - 50H : Cell Test Data Error
   - 51H : Cell Test Address Error
   - 08 0000H - 08 FFFFH (Error block in 64K unit)

   0101 Cache SRAM
   - 0800H - 08FFH (Error Page No.)
   - xx : Error Bit Set.

   0102 CMOS RAM R/W Error 21 04
   - 0000 0100 (Error Bit Set)
   - Error Address (21H Register)

2. ROM (BIOS, Extended BIOS, I/O Card) ... [02??]

   0200 BIOS ROM checksum Error
   0201 Extended BIOS ROM
   0202 I/O Card ROM)

   00AL : byte checksum Error value - socket on CPU board
   - EGA Card BIOS & etc.

3. Speaker ... [03??]

   0300 Speaker Error 00 00
   - No meaning

4. Mouse ... [04??]

   0400 Mouse test Error
   04F0 Mouse not installed Error

5. NPX (Numeric Processor Extension) ... [05??]

   0500 NPX Initialize test Error
   0501 NPX Control Word Initialize test Error xx xx — Control Word
   0502 NPX Status Word Initialize test Error xx xx — Status Word
   0503 NPX Tag Word Initialize test Error xx xx — Tag Word

0504 NPX 8 Stack Register Xfer test Error

0505 NPX Status Word test Error
0506 NPX IE of Status Word test Error — xx xx —— Status Word
0507 NPX DE of Status Word test Error — xx xx —— Status Word
0508 NPX ZE of Status Word test Error — xx xx —— Status Word
0509 NPX UE of Status Word test Error — xx xx —— Status Word
050A NPX PE and OE of Status Word test Error — xx xx —— Status Word
050B NPX PE of Status Word test Error — xx xx —— Status Word

050C NPX Tag Word test Error — xx xx —— Tag Word
050D NPX Tag Load, Store test Error — xx xx —— Store Value from NPX

050E NPX Arithmetic test Error — xx xx —— Status Word
050F NPX FSAVE, FRSTOR Command test Error — xx xx —— Status Word

0510 NPX 6 EA Exception test Error
0511 NPX Exception DM test Error

xx xx
- xx: Status Word low byte
- xx: NPX Exception occur byte

0512 NPX Exception ZM test Error — Same as above
0513 NPX Exception UM test Error — Same as above
0514 NPX Exception OM test Error — Same as above
0515 NPX Exception IM test Error — Same as above
0516 NPX Exception PM test Error — Same as above

6. PMS (Power Management System) ... [06??]

0600 PMS Battery charged, not Error
0601 PMS Battery discharged, not Error
0602 PMS Bad echo Error
0603 PMS Command test Error

7. Keyboard ... [07??]

0700 Keyboard Processor Reset Error — 00 0D - received code other than AAH
0701 Keyboard Scancode test Error — 00 00 - no meaning
0702 Keyboard controller BAT Error — 00 00 - no meaning
07F0 Keyboard layout not exist Error — 00 00 - no meaning

8. VGA Mode Test ... [08??]

0800 Video display test Error
0801 Color Attribute test Error
0802 Color Character set test Error
0803 80X25 mode test Error
0804 40X25 mode test Error
0805 80X60 mode test Error
0806 100X50 16 color test Error
0807 320X200 palette 0 test Error
0808 320X200 palette 1 test Error
0809 640X200 2 color test Error
080A 640X200 16 color test Error
080B 640X350 16 color test Error

080C 640X480 16 color test Error
080D 720X512 16 color test Error
080E 800X600 16 color test Error
080F 1024X768 16 color test Error
0810 320X200 256 color 1 test Error
0811 320X200 256 color 2 test Error
0812 640X480 256 color test Error
0813 800X600 256 color test Error
0814 1024X768 256 color test Error
0815 1024X768 16 color Non-Interlace mode test Error
0816 1024X768 256 color Non-Interlace mode test Error
0817 1280X960 16 color test Error
0818 1280X1024 16 color test Error
0819 640X480 32K color test Error
081A 800X600 32K color test Error

0820 LCD Horizontal line by 20 Test Error
0821 LCD Horizontal line by 10 Test Error
0822 LCD Vertical line by 20 Test Error
0823 LCD Vertical line by 10 Test Error
0824 LCD Grid Line by 20 Test Error
0825 LCD Grid Line by 10 Test Error
0826 LCD 256 Green Gray Test Error
0827 LCD Draw 40 Box Test Error

0830 8 page change test Error
0831 Text scrolling test Error
0832 2 font display test Error
0833 8 font display test Error
0834 Panning/Split screen test Error
0835 Smooth scroll test Error
0836 Window/Zoomming test Error

0880 Mono Attribute test Error
0881 Mono Character set test Error
0882 Mono 80X25 mode test Error
0883 Mono 640X350 4 color test Error
0884 Mono 8 page change test Error
0885 Mono Window/Zoomming test Error
08F0 VGA.EXE load & Execute Error

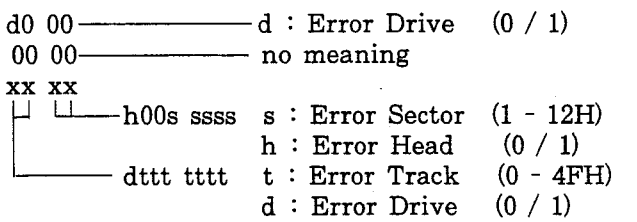
9. VGA Chip diagnostics ... [09??]

0900 EGA/VGA Chip diagnostics Error
0901 EGA/VGA general Error
0902 Video base RAM test Error
0903 Video RAM 256K test Error
0904 Video RAM 512K test Error
0905 Video RAM 1M test Error
0906 Read mode 0 test Error
0907 Read mode 1 test Error
0908 Write mode 0 test Error
0909 Write mode 1 test Error
090A Write mode 2 test Error
090B Write mode 3 test Error

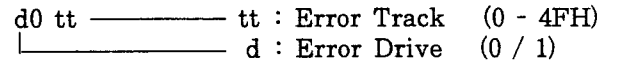
090C Switch setting test Error
090D Reading inactive plane test Error
090E Reading active plane test Error
090F Rotation function test Error
0910 Linear address test A0-A7 Error
0911 Linear address test A9-A15 Error
0912 Cursor address test A0-A7 Error
0913 Cursor address test A8-A15 Error
0914 Cursor address test A16-A17 Error
0915 Bit mask function test Error
0916 Latched data test Error
0917 Even/Odd mode test Error
0918 CRTC/TS/GDC/ATC test Error
0919 Internal REG test Error
091A Ext palette short test Error
091B Ext palette R/W test Error
091C Translation ROM data test Error

0A. Floppy Disk ... [0A??]

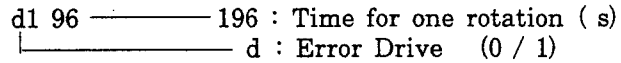
0A00 FDD Reset Test Error
0A01 FDD Format Error
0A02 FDD R/W Test Error


d0 00
d : Error Drive (0 / 1)
00 00
no meaning
xx xx
h00s ssss
s : Error Sector (1 - 12H)
h : Error Head (0 / 1)
dttt tttt
t : Error Track (0 - 4FH)
d : Error Drive (0 / 1)

0A03 FDD R/W Data Test Error
0A04 FDD Seeking Error



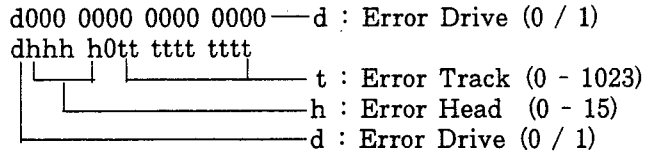
0A05 FDD Motor Speed Error



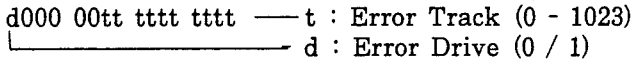
0A06 FDD Diskette too many times accessed Error
0AF0 Drive not selected Error
0AF1 Drive not exist Error
0AF2 Drive not ready Error

0B. Fixed Disk ... [0B??]

0B00 HDD Reset Error
0B01 HDD Format Error



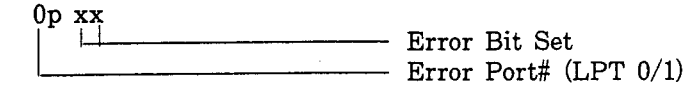
0B02 HDD R/W Test Error — same as Format
0B03 HDD Seeking Error



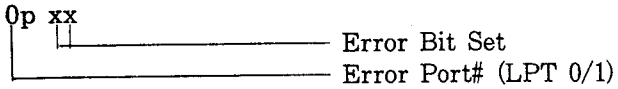
0B04 HDD ECC Test Error
0B05 HDD Scanning Test Error
0BF0 Drive not selected Error

0C. Parallel Port Test ... [0C??]

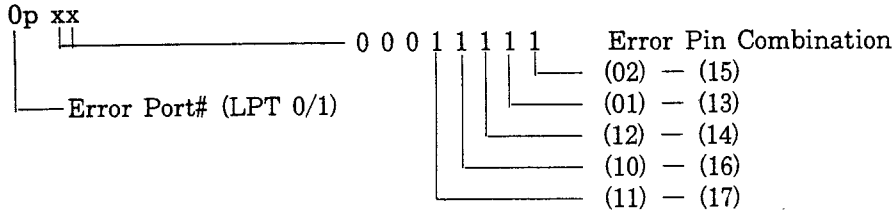
0C00 PIO Internal Data Port R/W Test Error



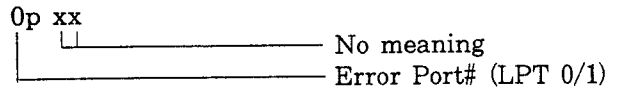
0C01 PIO Internal Control Port R/W Test Error



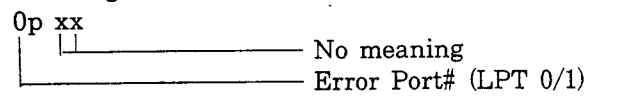
0C02 PIO External Loop-Back Test Error



0C03 PIO Interrupt Test Error

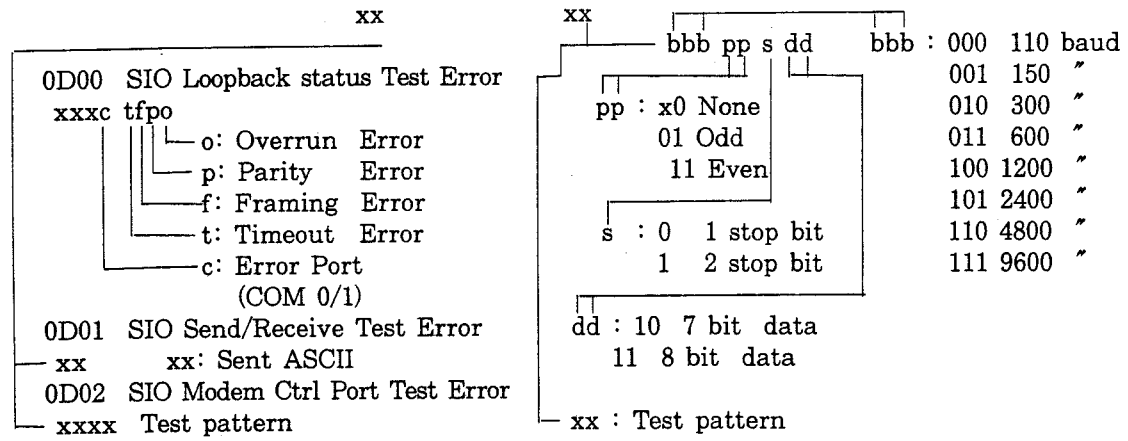


0C04 Printing test Error

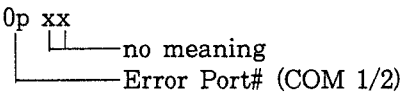


0CF0 Port not selected Error

0D. Serial Port Test ... [0D??]



0D03 SIO RxD INT Test Error
0D04 SIO TxD INT Test Error
0D05 SIO Break INT Test Error
0D06 SIO DCD/CTS INT Test Error
0D07 SIO DSR/RI INT Test Error
0D08 SIO Overrun INT Test Error



0D09 SIO Baudrate Test Error 0p xx — no meaning
Error Port# (COM 1/2)

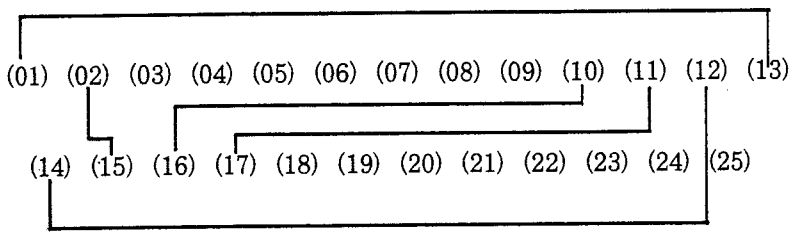
0D0A SIO loopback Test timeout Error
0D0B SIO INT Test timeout Error
0DF0 Port not selected Error
0DF1 Port not exist Error

0E. Modem Test ... [0E??]

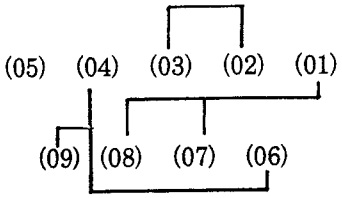
0E00 Modem status REG. defective Error
0E01 Not a compatible modem Error
0E02 Modem not connected Error
0E03 Modem CPU Command mode test Error
0E04 Modem CPU Command bus test Error
0E05 Modem - UART status Error
0E06 Modem CPU Command accept Error
0E07 Originate mode carrier test Error
0E08 Answer mode carrier test Error
0E09 Modem not initialized Error
0E0A Modem not installed Error

Loopback Connection Structure

[Printer Port Test]



[RS232 Port Test]



PASSWORD - PASSWORD SETTING

At first, system password feture is 'Disabled'. If you want to set the password to protect an unauthorized access to your computer, use "PASSWORD" for setting password.

Insert the system utilities diskette into drive A, then key in "PASSWORD" after DOS prompt, press <Enter> Key, and you will find the following message. You can use this utility program in fixed disk. But you must insert any diskette in drive A for saving your password.

A>PASSWORD<Enter>

The Password Utility Version 1.0
Now press any key to continue.
Enter Password: [.....]

Type your own password within 5 character to set it, then press the <Enter>key.

Verify Password: [.....]

Answer by retyping your new password, then press the <Enter> key. If you do not insert any diskette in drive A, you will see the message as follows:

- Not ready reading drive A.
Insert the floppy diskette, and press enter.

Otherwise, following message will appear.

Password Enabled

Now your password is enabled.
The diskette for saving your password will be needed when you forget password.
If you modify your new password, press<Esc> then restart password utility procedure, otherwise press F3 key to quit this utility
When you want to disable the password feature, you can do that with the </> key.
When you start your system, at the password prompt 'Enter Password:_, type your password followed by </> and <Enter> key. Now the password feature is disabled.
If you've forgotten your password, you can disable it with the diskette saving your password. Insert the diskette and restart your system. you will see a message as follows:

Password disabled
Remove the diskette and press Enter to reboot....
You can use this system with no password or reinstall password into the system with password utility program.